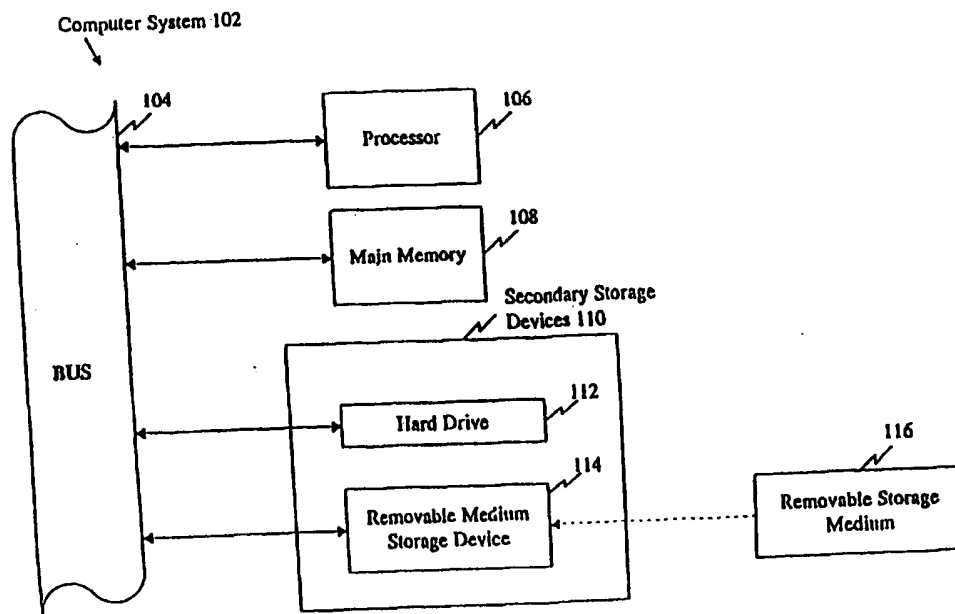


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(21) International Application Number: PCT/US97/19588 (22) International Filing Date: 30 October 1997 (30.10.97) (30) Priority Data: 60/029,960 31 October 1996 (31.10.96) US (71) Applicant (for all designated States except US): HUMAN GENOME SCIENCES, INC. [US/US]; 9410 Key West Avenue, Rockville, MD 20850 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): KUNSCH, Charles, A. [US/US]; 2398B Dunwoody Crossing, Atlanta, GA 30338 (US). CHOI, Gil, H. [KR/US]; 11429 Potomac Oaks Drive, Rockville, MD 20850 (US). DILLON, Patrick, J. [US/US]; 1055 Snipe Court, Carlsbad, CA 92009 (US). ROSEN, Craig, A. [US/US]; 22400 Rolling Hill Road, Laytonville, MD 20882 (US). BARASH, Steven, C. [US/US]; 582 College Parkway #303, Rockville, MD 20850 (US). FANNON, Michael [US/US]; 13501 Rippling Brook Drive, Silver Spring, MD 20850 (US). DOUGHERTY, Brian, A. [US/US]; 708 Meadow Field Court, Mount Airy, MD 21771 (US).		(74) Agents: BROOKES, A., Anders et al.; Human Genome Sciences, Inc., 9410 Key West Avenue, Rockville, MD 20850 (US). (81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published Without international search report and to be republished upon receipt of that report.

(54) Title: *STREPTOCOCCUS PNEUMONIAE* POLYNUCLEOTIDES AND SEQUENCES

(57) Abstract

The present invention provides polynucleotide sequences of the genome of *Streptococcus pneumoniae*, polypeptide sequences encoded by the polynucleotide sequences, corresponding polynucleotides and polypeptides, vectors and hosts comprising the polynucleotides, and assays and other uses thereof. The present invention further provides polynucleotide and polypeptide sequence information stored on computer readable media, and computer-based systems and methods which facilitate its use.

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Streptococcus pneumoniae Polynucleotides and Sequences

FIELD OF THE INVENTION

5 The present invention relates to the field of molecular biology. In particular, it relates to, among other things, nucleotide sequences of *Streptococcus pneumoniae*, contigs, ORFs, fragments, probes, primers and related polynucleotides thereof, peptides and polypeptides encoded by the sequences, and uses of the polynucleotides and sequences thereof, such as in fermentation,
10 polypeptide production, assays and pharmaceutical development, among others.

BACKGROUND OF THE INVENTION

Streptococcus pneumoniae has been one of the most extensively studied
15 microorganisms since its first isolation in 1881. It was the object of many investigations that led to important scientific discoveries. In 1928, Griffith observed that when heat-killed encapsulated pneumococci and live strains constitutively lacking any capsule were concomitantly injected into mice, the nonencapsulated could be converted into encapsulated pneumococci with the same
20 capsular type as the heat-killed strain. Years later, the nature of this "transforming principle," or carrier of genetic information, was shown to be DNA. (Avery, O.T., *et al.*, *J. Exp. Med.*, 79:137-157 (1944)).

 In spite of the vast number of publications on *S. pneumoniae* many questions about its virulence are still unanswered, and this pathogen remains a
25 major causative agent of serious human disease, especially community-acquired pneumonia. (Johnston, R.B., *et al.*, *Rev. Infect. Dis.* 13(Suppl. 6):S509-517 (1991)). In addition, in developing countries, the pneumococcus is responsible for the death of a large number of children under the age of 5 years from pneumococcal pneumonia. The incidence of pneumococcal disease is highest in infants under 2
30 years of age and in people over 60 years of age. Pneumococci are the second most frequent cause (after *Haemophilus influenzae* type b) of bacterial meningitis and otitis media in children. With the recent introduction of conjugate vaccines for *H. influenzae* type b, pneumococcal meningitis is likely to become increasingly prominent. *S. pneumoniae* is the most important etiologic agent of community-

acquired pneumonia in adults and is the second most common cause of bacterial meningitis behind *Neisseria meningitidis*.

The antibiotic generally prescribed to treat *S. pneumoniae* is benzylpenicillin, although resistance to this and to other antibiotics is found occasionally. Pneumococcal resistance to penicillin results from mutations in its penicillin-binding proteins. In uncomplicated pneumococcal pneumonia caused by a sensitive strain, treatment with penicillin is usually successful unless started too late. Erythromycin or clindamycin can be used to treat pneumonia in patients hypersensitive to penicillin, but resistant strains to these drugs exist. Broad spectrum antibiotics (e.g., the tetracyclines) may also be effective, although tetracycline-resistant strains are not rare. In spite of the availability of antibiotics, the mortality of pneumococcal bacteremia in the last four decades has remained stable between 25 and 29%. (Gillespie, S.H., *et al.*, *J. Med. Microbiol.* 28:237-248 (1989).

S. pneumoniae is carried in the upper respiratory tract by many healthy individuals. It has been suggested that attachment of pneumococci is mediated by a disaccharide receptor on fibronectin, present on human pharyngeal epithelial cells. (Anderson, B.J., *et al.*, *J. Immunol.* 142:2464-2468 (1989). The mechanisms by which pneumococci translocate from the nasopharynx to the lung, thereby causing pneumonia, or migrate to the blood, giving rise to bacteremia or septicemia, are poorly understood. (Johnston, R.B., *et al.*, *Rev. Infect. Dis.* 13(Suppl. 6):S509-517 (1991).

Various proteins have been suggested to be involved in the pathogenicity of *S. pneumoniae*, however, only a few of them have actually been confirmed as virulence factors. Pneumococci produce an IgA1 protease that might interfere with host defense at mucosal surfaces. (Kornfield, S.J., *et al.*, *Rev. Inf. Dis.* 3:521-534 (1981). *S. pneumoniae* also produces neuraminidase, an enzyme that may facilitate attachment to epithelial cells by cleaving sialic acid from the host glycolipids and gangliosides. Partially purified neuraminidase was observed to induce meningitis-like symptoms in mice; however, the reliability of this finding has been questioned because the neuraminidase preparations used were probably contaminated with cell wall products. Other pneumococcal proteins besides neuraminidase are involved in the adhesion of pneumococci to epithelial and endothelial cells. These pneumococcal proteins have as yet not been identified. Recently, Cundell *et al.*, reported that peptide permeases can modulate

pneumococcal adherence to epithelial and endothelial cells. It was, however, unclear whether these permeases function directly as adhesions or whether they enhance adherence by modulating the expression of pneumococcal adhesions. (DeVelasco, E.A., *et al.*, *Micro. Rev.* 59:591-603 (1995). A better understanding of the virulence factors determining its pathogenicity will need to be developed to cope with the devastating effects of pneumococcal disease in humans.

Ironically, despite the prominent role of *S. pneumoniae* in the discovery of DNA, little is known about the molecular genetics of the organism. The *S. pneumoniae* genome consists of one circular, covalently closed, double-stranded DNA and a collection of so-called variable accessory elements, such as prophages, plasmids, transposons and the like. Most physical characteristics and almost all of the genes of *S. pneumoniae* are unknown. Among the few that have been identified, most have not been physically mapped or characterized in detail. Only a few genes of this organism have been sequenced. (See, for instance current versions of GENBANK and other nucleic acid databases, and references that relate to the genome of *S. pneumoniae* such as those set out elsewhere herein.)

It is clear that the etiology of diseases mediated or exacerbated by *S. pneumoniae*, infection involves the programmed expression of *S. pneumoniae* genes, and that characterizing the genes and their patterns of expression would add dramatically to our understanding of the organism and its host interactions. Knowledge of *S. pneumoniae* genes and genomic organization would improve our understanding of disease etiology and lead to improved and new ways of preventing, ameliorating, arresting and reversing diseases. Moreover, characterized genes and genomic fragments of *S. pneumoniae* would provide reagents for, among other things, detecting, characterizing and controlling *S. pneumoniae* infections. There is a need to characterize the genome of *S. pneumoniae* and for polynucleotides of this organism.

SUMMARY OF THE INVENTION

5 The present invention is based on the sequencing of fragments of the *Streptococcus pneumoniae* genome. The primary nucleotide sequences which were generated are provided in SEQ ID NOS:1-391.

10 The present invention provides the nucleotide sequence of several hundred contigs of the *Streptococcus pneumoniae* genome, which are listed in tables below and set out in the Sequence Listing submitted herewith, and representative fragments thereof, in a form which can be readily used, analyzed, and interpreted by a skilled artisan. In one embodiment, the present invention is provided as contiguous strings of primary sequence information corresponding to the nucleotide sequences depicted in SEQ ID NOS:1-391.

15 The present invention further provides nucleotide sequences which are at least 95% identical to the nucleotide sequences of SEQ ID NOS:1-391.

20 The nucleotide sequence of SEQ ID NOS:1-391, a representative fragment thereof, or a nucleotide sequence which is at least 95% identical to the nucleotide sequence of SEQ ID NOS:1-391 may be provided in a variety of mediums to facilitate its use. In one application of this embodiment, the sequences of the present invention are recorded on computer readable media. Such media includes, but is not limited to: magnetic storage media, such as floppy discs, hard disc storage medium, and magnetic tape; optical storage media such as CD-ROM; electrical storage media such as RAM and ROM; and hybrids of these categories such as magnetic/optical storage media.

25 The present invention further provides systems, particularly computer-based systems which contain the sequence information herein described stored in a data storage means. Such systems are designed to identify commercially important fragments of the *Streptococcus pneumoniae* genome.

30 Another embodiment of the present invention is directed to fragments of the *Streptococcus pneumoniae* genome having particular structural or functional attributes. Such fragments of the *Streptococcus pneumoniae* genome of the present invention include, but are not limited to, fragments which encode peptides, hereinafter referred to as open reading frames or ORFs, fragments which modulate the expression of an operably linked ORF, hereinafter referred to as expression modulating fragments or EMFs, and fragments which can be used to diagnose the

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presence of *Streptococcus pneumoniae* in a sample, hereinafter referred to as diagnostic fragments or DFs.

Each of the ORFs in fragments of the *Streptococcus pneumoniae* genome disclosed in Tables 1-3, and the EMFs found 5' to the ORFs, can be used in numerous ways as polynucleotide reagents. For instance, the sequences can be used as diagnostic probes or amplification primers for detecting or determining the presence of a specific microbe in a sample, to selectively control gene expression in a host and in the production of polypeptides, such as polypeptides encoded by ORFs of the present invention, particular those polypeptides that have a pharmacological activity.

The present invention further includes recombinant constructs comprising one or more fragments of the *Streptococcus pneumoniae* genome of the present invention. The recombinant constructs of the present invention comprise vectors, such as a plasmid or viral vector, into which a fragment of the *Streptococcus pneumoniae* has been inserted.

The present invention further provides host cells containing any of the isolated fragments of the *Streptococcus pneumoniae* genome of the present invention. The host cells can be a higher eukaryotic host cell, such as a mammalian cell, a lower eukaryotic cell, such as a yeast cell, or a procaryotic cell such as a bacterial cell.

The present invention is further directed to isolated polypeptides and proteins encoded by ORFs of the present invention. A variety of methods, well known to those of skill in the art, routinely may be utilized to obtain any of the polypeptides and proteins of the present invention. For instance, polypeptides and proteins of the present invention having relatively short, simple amino acid sequences readily can be synthesized using commercially available automated peptide synthesizers. Polypeptides and proteins of the present invention also may be purified from bacterial cells which naturally produce the protein. Yet another alternative is to purify polypeptide and proteins of the present invention from cells which have been altered to express them.

The invention further provides methods of obtaining homologs of the fragments of the *Streptococcus pneumoniae* genome of the present invention and homologs of the proteins encoded by the ORFs of the present invention. Specifically, by using the nucleotide and amino acid sequences disclosed herein as

a probe or as primers, and techniques such as PCR cloning and colony/plaque hybridization, one skilled in the art can obtain homologs.

The invention further provides antibodies which selectively bind polypeptides and proteins of the present invention. Such antibodies include both
5 monoclonal and polyclonal antibodies.

The invention further provides hybridomas which produce the above-described antibodies. A hybridoma is an immortalized cell line which is capable of secreting a specific monoclonal antibody.

The present invention further provides methods of identifying test samples
10 derived from cells which express one of the ORFs of the present invention, or a homolog thereof. Such methods comprise incubating a test sample with one or more of the antibodies of the present invention, or one or more of the DFs of the present invention, under conditions which allow a skilled artisan to determine if the sample contains the ORF or product produced therefrom.

15 In another embodiment of the present invention, kits are provided which contain the necessary reagents to carry out the above-described assays.

Specifically, the invention provides a compartmentalized kit to receive, in close confinement, one or more containers which comprises: (a) a first container comprising one of the antibodies, or one of the DFs of the present invention; and
20 (b) one or more other containers comprising one or more of the following: wash reagents, reagents capable of detecting presence of bound antibodies or hybridized DFs.

Using the isolated proteins of the present invention, the present invention further provides methods of obtaining and identifying agents capable of binding to
25 a polypeptide or protein encoded by one of the ORFs of the present invention. Specifically, such agents include, as further described below, antibodies, peptides, carbohydrates, pharmaceutical agents and the like. Such methods comprise steps of: (a) contacting an agent with an isolated protein encoded by one of the ORFs of the present invention; and (b) determining whether the agent binds to said protein.

30 The present genomic sequences of *Streptococcus pneumoniae* will be of great value to all laboratories working with this organism and for a variety of commercial purposes. Many fragments of the *Streptococcus pneumoniae* genome will be immediately identified by similarity searches against GenBank or protein databases and will be of immediate value to *Streptococcus pneumoniae* researchers

and for immediate commercial value for the production of proteins or to control gene expression.

The methodology and technology for elucidating extensive genomic sequences of bacterial and other genomes has and will greatly enhance the ability to
5 analyze and understand chromosomal organization. In particular, sequenced contigs and genomes will provide the models for developing tools for the analysis of chromosome structure and function, including the ability to identify genes within large segments of genomic DNA, the structure, position, and spacing of regulatory elements, the identification of genes with potential industrial applications, and the
10 ability to do comparative genomic and molecular phylogeny.

DESCRIPTION OF THE FIGURES

FIGURE 1 is a block diagram of a computer system (102) that can be
15 used to implement computer-based systems of present invention.

FIGURE 2 is a schematic diagram depicting the data flow and computer programs used to collect, assemble, edit and annotate the contigs of the *Streptococcus pneumoniae* genome of the present invention. Both Macintosh and
20 Unix platforms are used to handle the AB 373 and 377 sequence data files, largely as described in Kerlavage *et al.*, *Proceedings of the Twenty-Sixth Annual Hawaii International Conference on System Sciences*, 585, IEEE Computer Society Press, Washington D.C. (1993). Factura (AB) is a Macintosh program designed for automatic vector sequence removal and end-trimming of sequence files. The
25 program Loadis runs on a Macintosh platform and parses the feature data extracted from the sequence files by Factura to the Unix based *Streptococcus pneumoniae* relational database. Assembly of contigs (and whole genome sequences) is accomplished by retrieving a specific set of sequence files and their associated features using Extrseq, a Unix utility for retrieving sequences from an SQL
30 database. The resulting sequence file is processed by seq_filter to trim portions of the sequences with more than 2% ambiguous nucleotides. The sequence files were assembled using TIGR Assembler, an assembly engine designed at The Institute for Genomic Research (TIGR) for rapid and accurate assembly of thousands of sequence fragments. The collection of contigs generated by the assembly step is
35 loaded into the database with the lassie program. Identification of open reading

frames (ORFs) is accomplished by processing contigs with zorf or GenMark. The ORFs are searched against *S. pneumoniae* sequences from GenBank and against all protein sequences using the BLASTN and BLASTP programs, described in Altschul *et al.*, *J. Mol. Biol.* 215: 403-410 (1990)). Results of the ORF
5 determination and similarity searching steps were loaded into the database. As described below, some results of the determination and the searches are set out in Tables 1-3.

DETAILED DESCRIPTION OF ILLUSTRATIVE EMBODIMENTS

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The present invention is based on the sequencing of fragments of the *Streptococcus pneumoniae* genome and analysis of the sequences. The primary nucleotide sequences generated by sequencing the fragments are provided in SEQ ID NOS:1-391. (As used herein, the "primary sequence" refers to the nucleotide
15 sequence represented by the IUPAC nomenclature system.)

In addition to the aforementioned *Streptococcus pneumoniae* polynucleotide and polynucleotide sequences, the present invention provides the nucleotide sequences of SEQ ID NOS:1-391, or representative fragments thereof, in a form which can be readily used, analyzed, and interpreted by a skilled artisan.

20 As used herein, a "representative fragment of the nucleotide sequence depicted in SEQ ID NOS:1-391" refers to any portion of the SEQ ID NOS:1-391 which is not presently represented within a publicly available database. Preferred representative fragments of the present invention are *Streptococcus pneumoniae* open reading frames (ORFs), expression modulating fragment (EMFs) and
25 fragments which can be used to diagnose the presence of *Streptococcus pneumoniae* in sample (DFs): A non-limiting identification of preferred representative fragments is provided in Tables 1-3. As discussed in detail below, the information provided in SEQ ID NOS:1-391 and in Tables 1-3 together with routine cloning, synthesis, sequencing and assay methods will enable those skilled
30 in the art to clone and sequence all "representative fragments" of interest, including open reading frames encoding a large variety of *Streptococcus pneumoniae* proteins.

While the presently disclosed sequences of SEQ ID NOS:1-391 are highly accurate, sequencing techniques are not perfect and, in relatively rare instances,
35 further investigation of a fragment or sequence of the invention may reveal a

nucleotide sequence error present in a nucleotide sequence disclosed in SEQ ID NOS:1-391. However, once the present invention is made available (*i.e.*, once the information in SEQ ID NOS:1-391 and Tables 1-3 has been made available), resolving a rare sequencing error in SEQ ID NOS:1-391 will be well within the skill of the art. The present disclosure makes available sufficient sequence information to allow any of the described contigs or portions thereof to be obtained readily by straightforward application of routine techniques. Further sequencing of such polynucleotide may proceed in like manner using manual and automated sequencing methods which are employed ubiquitous in the art. Nucleotide sequence editing software is publicly available. For example, Applied Biosystem's (AB) AutoAssembler can be used as an aid during visual inspection of nucleotide sequences. By employing such routine techniques potential errors readily may be identified and the correct sequence then may be ascertained by targeting further sequencing effort, also of a routine nature, to the region containing the potential error.

Even if all of the very rare sequencing errors in SEQ ID NOS:1-391 were corrected, the resulting nucleotide sequences would still be at least 95% identical, nearly all would be at least 99% identical, and the great majority would be at least 99.9% identical to the nucleotide sequences of SEQ ID NOS:1-391.

As discussed elsewhere herein, polynucleotides of the present invention readily may be obtained by routine application of well known and standard procedures for cloning and sequencing DNA. Detailed methods for obtaining libraries and for sequencing are provided below, for instance. A wide variety of *Streptococcus pneumoniae* strains that can be used to prepare *S. pneumoniae* genomic DNA for cloning and for obtaining polynucleotides of the present invention are available to the public from recognized depository institutions, such as the American Type Culture Collection (ATCC). While the present invention is enabled by the sequences and other information herein disclosed, the *S. pneumoniae* strain that provided the DNA of the present Sequence Listing, Strain 7/87 14.8.91, has been deposited in the ATCC, as a convenience to those of skill in the art. As a further convenience, a library of *S. pneumoniae* genomic DNA, derived from the same strain, also has been deposited in the ATCC. The *S. pneumoniae* strain was deposited on October 10, 1996, and was given Deposit No. 55840, and the cDNA library was deposited on October 11, 1996 and was given Deposit No. 97755. The genomic fragments in the library are 15 to 20 kb

fragments generated by partial Sau3A1 digestion and they are inserted into the BamHI site in the well-known lambda-derived vector lambda DASH II (Stratagene, La Jolla, CA). The provision of the deposits is not a waiver of any rights of the inventors or their assignees in the present subject matter.

5 The nucleotide sequences of the genomes from different strains of *Streptococcus pneumoniae* differ somewhat. However, the nucleotide sequences of the genomes of all *Streptococcus pneumoniae* strains will be at least 95% identical, in corresponding part, to the nucleotide sequences provided in SEQ ID NOS:1-391. Nearly all will be at least 99% identical and the great majority will be
10 99.9% identical.

Thus, the present invention further provides nucleotide sequences which are at least 95%, preferably 99% and most preferably 99.9% identical to the nucleotide sequences of SEQ ID NOS:1-391, in a form which can be readily used, analyzed and interpreted by the skilled artisan.

15 Methods for determining whether a nucleotide sequence is at least 95%, at least 99% or at least 99.9% identical to the nucleotide sequences of SEQ ID NOS:1-391 are routine and readily available to the skilled artisan. For example, the well known fasta algorithm described in Pearson and Lipman, *Proc. Natl. Acad. Sci. USA* 85: 2444 (1988) can be used to generate the percent identity of nucleotide
20 sequences. The BLASTN program also can be used to generate an identity score of polynucleotides compared to one another.

COMPUTER RELATED EMBODIMENTS

25 The nucleotide sequences provided in SEQ ID NOS:1-391, a representative fragment thereof, or a nucleotide sequence at least 95%, preferably at least 99% and most preferably at least 99.9% identical to a polynucleotide sequence of SEQ ID NOS:1-391 may be "provided" in a variety of mediums to facilitate use thereof. As used herein, provided refers to a manufacture, other than an isolated nucleic acid molecule, which contains a nucleotide sequence of the present invention; *i.e.*,
30 a nucleotide sequence provided in SEQ ID NOS:1-391, a representative fragment thereof, or a nucleotide sequence at least 95%, preferably at least 99% and most preferably at least 99.9% identical to a polynucleotide of SEQ ID NOS:1-391. Such a manufacture provides a large portion of the *Streptococcus pneumoniae* genome and parts thereof (*e.g.*, a *Streptococcus pneumoniae* open reading frame
35 (ORF)) in a form which allows a skilled artisan to examine the manufacture using

means not directly applicable to examining the *Streptococcus pneumoniae* genome or a subset thereof as it exists in nature or in purified form.

In one application of this embodiment, a nucleotide sequence of the present invention can be recorded on computer readable media. As used herein, "computer
5 readable media" refers to any medium which can be read and accessed directly by a computer. Such media include, but are not limited to: magnetic storage media, such as floppy discs, hard disc storage medium, and magnetic tape; optical storage media such as CD- ROM; electrical storage media such as RAM and ROM; and hybrids of these categories, such as magnetic/optical storage media. A skilled
10 artisan can readily appreciate how any of the presently known computer readable mediums can be used to create a manufacture comprising computer readable medium having recorded thereon a nucleotide sequence of the present invention. Likewise, it will be clear to those of skill how additional computer readable media that may be developed also can be used to create analogous manufactures having
15 recorded thereon a nucleotide sequence of the present invention.

As used herein, "recorded" refers to a process for storing information on computer readable medium. A skilled artisan can readily adopt any of the presently know methods for recording information on computer readable medium to generate manufactures comprising the nucleotide sequence information of the present
20 invention. A variety of data storage structures are available to a skilled artisan for creating a computer readable medium having recorded thereon a nucleotide sequence of the present invention. The choice of the data storage structure will generally be based on the means chosen to access the stored information. In addition, a variety of data processor programs and formats can be used to store the
25 nucleotide sequence information of the present invention on computer readable medium. The sequence information can be represented in a word processing text file, formatted in commercially- available software such as WordPerfect and MicroSoft Word, or represented in the form of an ASCII file, stored in a database application, such as DB2, Sybase, Oracle, or the like. A skilled artisan can readily
30 adapt any number of data-processor structuring formats (*e.g.*, text file or database) in order to obtain computer readable medium having recorded thereon the nucleotide sequence information of the present invention.

Computer software is publicly available which allows a skilled artisan to access sequence information provided in a computer readable medium. Thus, by
35 providing in computer readable form the nucleotide sequences of SEQ ID NOS:1-

391, a representative fragment thereof, or a nucleotide sequence at least 95%, preferably at least 99% and most preferably at least 99.9% identical to a sequence of SEQ ID NOS:1-391 the present invention enables the skilled artisan routinely to access the provided sequence information for a wide variety of purposes.

5 The examples which follow demonstrate how software which implements the BLAST (Altschul *et al.*, *J. Mol. Biol.* 215:403-410 (1990)) and BLAZE (Brutlag *et al.*, *Comp. Chem.* 17:203-207 (1993)) search algorithms on a Sybase system was used to identify open reading frames (ORFs) within the *Streptococcus pneumoniae* genome which contain homology to ORFs or proteins from both
10 *Streptococcus pneumoniae* and from other organisms. Among the ORFs discussed herein are protein encoding fragments of the *Streptococcus pneumoniae* genome useful in producing commercially important proteins, such as enzymes used in fermentation reactions and in the production of commercially useful metabolites.

 The present invention further provides systems, particularly computer-
15 based systems, which contain the sequence information described herein. Such systems are designed to identify, among other things, commercially important fragments of the *Streptococcus pneumoniae* genome.

 As used herein, "a computer-based system" refers to the hardware means, software means, and data storage means used to analyze the nucleotide sequence
20 information of the present invention. The minimum hardware means of the computer-based systems of the present invention comprises a central processing unit (CPU), input means, output means, and data storage means. A skilled artisan can readily appreciate that any one of the currently available computer-based systems are suitable for use in the present invention.

25 As stated above, the computer-based systems of the present invention comprise a data storage means having stored therein a nucleotide sequence of the present invention and the necessary hardware means and software means for supporting and implementing a search means.

 As used herein, "data storage means" refers to memory which can store
30 nucleotide sequence information of the present invention, or a memory access means which can access manufactures having recorded thereon the nucleotide sequence information of the present invention.

 As used herein, "search means" refers to one or more programs which are implemented on the computer-based system to compare a target sequence or target
35 structural motif with the sequence information stored within the data storage

means. Search means are used to identify fragments or regions of the present genomic sequences which match a particular target sequence or target motif. A variety of known algorithms are disclosed publicly and a variety of commercially available software for conducting search means are and can be used in the computer-based systems of the present invention. Examples of such software includes, but is not limited to, MacPattern (EMBL), BLASTN and BLASTX (NCBIA). A skilled artisan can readily recognize that any one of the available algorithms or implementing software packages for conducting homology searches can be adapted for use in the present computer-based systems.

As used herein, a "target sequence" can be any DNA or amino acid sequence of six or more nucleotides or two or more amino acids. A skilled artisan can readily recognize that the longer a target sequence is, the less likely a target sequence will be present as a random occurrence in the database. The most preferred sequence length of a target sequence is from about 10 to 100 amino acids or from about 30 to 300 nucleotide residues. However, it is well recognized that searches for commercially important fragments, such as sequence fragments involved in gene expression and protein processing, may be of shorter length.

As used herein, "a target structural motif," or "target motif," refers to any rationally selected sequence or combination of sequences in which the sequence(s) are chosen based on a three-dimensional configuration which is formed upon the folding of the target motif. There are a variety of target motifs known in the art. Protein target motifs include, but are not limited to, enzymic active sites and signal sequences. Nucleic acid target motifs include, but are not limited to, promoter sequences, hairpin structures and inducible expression elements (protein binding sequences).

A variety of structural formats for the input and output means can be used to input and output the information in the computer-based systems of the present invention. A preferred format for an output means ranks fragments of the *Streptococcus pneumoniae* genomic sequences possessing varying degrees of homology to the target sequence or target motif. Such presentation provides a skilled artisan with a ranking of sequences which contain various amounts of the target sequence or target motif and identifies the degree of homology contained in the identified fragment.

A variety of comparing means can be used to compare a target sequence or target motif with the data storage means to identify sequence fragments of the

Streptococcus pneumoniae genome. In the present examples, implementing software which implement the BLAST and BLAZE algorithms, described in Altschul *et al.*, *J. Mol. Biol.* 215: 403-410 (1990), is used to identify open reading frames within the *Streptococcus pneumoniae* genome. A skilled artisan can readily
5 recognize that any one of the publicly available homology search programs can be used as the search means for the computer-based systems of the present invention. Of course, suitable proprietary systems that may be known to those of skill also may be employed in this regard.

Figure 1 provides a block diagram of a computer system illustrative of
10 embodiments of this aspect of present invention. The computer system 102 includes a processor 106 connected to a bus 104. Also connected to the bus 104 are a main memory 108 (preferably implemented as random access memory, RAM) and a variety of secondary storage devices 110, such as a hard drive 112 and a removable medium storage device 114. The removable medium storage device 114
15 may represent, for example, a floppy disk drive, a CD-ROM drive, a magnetic tape drive, *etc.* A removable storage medium 116 (such as a floppy disk, a compact disk, a magnetic tape, *etc.*) containing control logic and/or data recorded therein may be inserted into the removable medium storage device 114. The computer system 102 includes appropriate software for reading the control logic and/or the
20 data from the removable medium storage device 114, once it is inserted into the removable medium storage device 114.

A nucleotide sequence of the present invention may be stored in a well known manner in the main memory 108, any of the secondary storage devices 110, and/or a removable storage medium 116. During execution, software for accessing
25 and processing the genomic sequence (such as search tools, comparing tools, *etc.*) reside in main memory 108, in accordance with the requirements and operating parameters of the operating system, the hardware system and the software program or programs.

BIOCHEMICAL EMBODIMENTS

Other embodiments of the present invention are directed to isolated fragments of the *Streptococcus pneumoniae* genome. The fragments of the
5 *Streptococcus pneumoniae* genome of the present invention include, but are not limited to fragments which encode peptides and polypeptides, hereinafter open reading frames (ORFs), fragments which modulate the expression of an operably linked ORF, hereinafter expression modulating fragments (EMFs) and fragments which can be used to diagnose the presence of *Streptococcus pneumoniae* in a
10 sample, hereinafter diagnostic fragments (DFs).

As used herein, an "isolated nucleic acid molecule" or an "isolated fragment of the *Streptococcus pneumoniae* genome" refers to a nucleic acid molecule possessing a specific nucleotide sequence which has been subjected to purification means to reduce, from the composition, the number of compounds which are
15 normally associated with the composition. Particularly, the term refers to the nucleic acid molecules having the sequences set out in SEQ ID NOS:1-391, to representative fragments thereof as described above, to polynucleotides at least 95%, preferably at least 99% and especially preferably at least 99.9% identical in sequence thereto, also as set out above.

20 A variety of purification means can be used to generate the isolated fragments of the present invention. These include, but are not limited to methods which separate constituents of a solution based on charge, solubility, or size.

In one embodiment, *Streptococcus pneumoniae* DNA can be enzymatically sheared to produce fragments of 15-20 kb in length. These fragments can then be
25 used to generate a *Streptococcus pneumoniae* library by inserting them into lambda clones as described in the Examples below. Primers flanking, for example, an ORF, such as those enumerated in Tables 1-3 can then be generated using nucleotide sequence information provided in SEQ ID NOS:1-391. Well known and routine techniques of PCR cloning then can be used to isolate the ORF from
30 the lambda DNA library or *Streptococcus pneumoniae* genomic DNA. Thus, given the availability of SEQ ID NOS:1-391, the information in Tables 1, 2 and 3, and the information that may be obtained readily by analysis of the sequences of SEQ ID NOS:1-391 using methods set out above, those of skill will be enabled by the present disclosure to isolate any ORF-containing or other nucleic acid fragment of
35 the present invention.

The isolated nucleic acid molecules of the present invention include, but are not limited to single stranded and double stranded DNA, and single stranded RNA.

As used herein, an "open reading frame," ORF, means a series of triplets coding for amino acids without any termination codons and is a sequence
5 translatable into protein.

Tables 1, 2, and 3 list ORFs in the *Streptococcus pneumoniae* genomic contigs of the present invention that were identified as putative coding regions by the GeneMark software using organism-specific second-order Markov probability transition matrices. It will be appreciated that other criteria can be used, in
10 accordance with well known analytical methods, such as those discussed herein, to generate more inclusive, more restrictive, or more selective lists.

Table 1 sets out ORFs in the *Streptococcus pneumoniae* contigs of the present invention that over a continuous region of at least 50 bases are 95% or more identical (by BLAST analysis) to a nucleotide sequence available through
15 GenBank in October, 1997.

Table 2 sets out ORFs in the *Streptococcus pneumoniae* contigs of the present invention that are not in Table 1 and match, with a BLASTP probability score of 0.01 or less, a polypeptide sequence available through GenBank in
October, 1997.

20 Table 3 sets out ORFs in the *Streptococcus pneumoniae* contigs of the present invention that do not match significantly, by BLASTP analysis, a polypeptide sequence available through GenBank in October, 1997.

In each table, the first and second columns identify the ORF by, respectively, contig number and ORF number within the contig; the third column
25 indicates the first nucleotide of the ORF (actually the first nucleotide of the stop codon immediately preceding the ORF), counting from the 5' end of the contig strand; and the fourth column, "stop (nt)" indicates the last nucleotide of the stop codon defining the 3' end of the ORF.

In Tables 1 and 2, column five, lists the Reference for the closest
30 matching sequence available through GenBank. These reference numbers are the databases entry numbers commonly used by those of skill in the art, who will be familiar with their denominators. Descriptions of the nomenclature are available from the National Center for Biotechnology Information. Column six in Tables 1 and 2 provides the gene name of the matching sequence; column seven provides
35 the BLAST identity score and column eight the BLAST similarity score from the

comparison of the ORF and the homologous gene; and column nine indicates the length in nucleotides of the highest scoring segment pair identified by the BLAST identity analysis.

Each ORF described in the tables is defined by "start (nt)" (5') and "stop (nt)" (3') nucleotide position numbers. These position numbers refer to the boundaries of each ORF and provide orientation with respect to whether the forward or reverse strand is the coding strand and which reading frame the coding sequence is contained. The "start" position is the first nucleotide of the triplet encoding a stop codon just 5' to the ORF and the "stop" position is the last nucleotide of the triplet encoding the next in-frame stop codon (i.e., the stop codon at the 3' end of the ORF). Those of ordinary skill in the art appreciate that preferred fragments within each ORF described in the table include fragments of each ORF which include the entire sequence from the delineated "start" and "stop" positions excepting the first and last three nucleotides since these encode stop codons. Thus, polynucleotides set out as ORFs in the tables but lacking the three (3) 5' nucleotides and the three (3) 3' nucleotides are encompassed by the present invention. Those of skill also appreciate that particularly preferred are fragments within each ORF that are polynucleotide fragments comprising polypeptide coding sequence. As defined herein, "coding sequence" includes the fragment within an ORF beginning at the first in-frame ATG (triplet encoding methionine) and ending with the last nucleotide prior to the triplet encoding the 3' stop codon. Preferred are fragments comprising the entire coding sequence and fragments comprising the entire coding sequence, excepting the coding sequence for the N-terminal methionine. Those of skill appreciate that the N-terminal methionine is often removed during post-translational processing and that polynucleotides lacking the ATG can be used to facilitate production of N-terminal fusion proteins which may be beneficial in the production or use of genetically engineered proteins. Of course, due to the degeneracy of the genetic code many polynucleotides can encode a given polypeptide. Thus, the invention further includes polynucleotides comprising a nucleotide sequence encoding a polypeptide sequence itself encoded by the coding sequence within an ORF described in Tables 1-3 herein. Further, polynucleotides at least 95%, preferably at least 99% and especially preferably at least 99.9% identical in sequence to the foregoing polynucleotides, are contemplated by the present invention.

Polypeptides encoded by polynucleotides described above and elsewhere herein are also provided by the present invention as are polypeptide comprising an amino acid sequence at least about 95%, preferably at least 97% and even more preferably 99% identical to the amino acid sequence of a polypeptide encoded by an ORF shown in Tables 1-3. These polypeptides may or may not comprise an N-terminal methionine.

The concepts of percent identity and percent similarity of two polypeptide sequences is well understood in the art. For example, two polypeptides 10 amino acids in length which differ at three amino acid positions (*e.g.*, at positions 1, 3 and 5) are said to have a percent identity of 70%. However, the same two polypeptides would be deemed to have a percent similarity of 80% if, for example at position 5, the amino acids moieties, although not identical, were "similar" (*i.e.*, possessed similar biochemical characteristics). Many programs for analysis of nucleotide or amino acid sequence similarity, such as fasta and BLAST specifically list percent identity of a matching region as an output parameter. Thus, for instance, Tables 1 and 2 herein enumerate the percent identity of the highest scoring segment pair in each ORF and its listed relative. Further details concerning the algorithms and criteria used for homology searches are provided below and are described in the pertinent literature highlighted by the citations provided below.

It will be appreciated that other criteria can be used to generate more inclusive and more exclusive listings of the types set out in the tables. As those of skill will appreciate, narrow and broad searches both are useful. Thus, a skilled artisan can readily identify ORFs in contigs of the *Streptococcus pneumoniae* genome other than those listed in Tables 1-3, such as ORFs which are overlapping or encoded by the opposite strand of an identified ORF in addition to those ascertainable using the computer-based systems of the present invention.

As used herein, an "expression modulating fragment," EMF, means a series of nucleotide molecules which modulates the expression of an operably linked ORF or EMF.

As used herein, a sequence is said to "modulate the expression of an operably linked sequence" when the expression of the sequence is altered by the presence of the EMF. EMFs include, but are not limited to, promoters, and promoter modulating sequences (inducible elements). One class of EMFs are fragments which induce the expression of an operably linked ORF in response to a specific regulatory factor or physiological event.

EMF sequences can be identified within the contigs of the *Streptococcus pneumoniae* genome by their proximity to the ORFs provided in Tables 1-3. An intergenic segment, or a fragment of the intergenic segment, from about 10 to 200 nucleotides in length, taken from any one of the ORFs of Tables 1-3 will modulate the expression of an operably linked ORF in a fashion similar to that found with the naturally linked ORF sequence. As used herein, an "intergenic segment" refers to fragments of the *Streptococcus pneumoniae* genome which are between two ORF(s) herein described. EMFs also can be identified using known EMFs as a target sequence or target motif in the computer-based systems of the present invention. Further, the two methods can be combined and used together.

The presence and activity of an EMF can be confirmed using an EMF trap vector. An EMF trap vector contains a cloning site linked to a marker sequence. A marker sequence encodes an identifiable phenotype, such as antibiotic resistance or a complementing nutrition auxotrophic factor, which can be identified or assayed when the EMF trap vector is placed within an appropriate host under appropriate conditions. As described above, a EMF will modulate the expression of an operably linked marker sequence. A more detailed discussion of various marker sequences is provided below. A sequence which is suspected as being an EMF is cloned in all three reading frames in one or more restriction sites upstream from the marker sequence in the EMF trap vector. The vector is then transformed into an appropriate host using known procedures and the phenotype of the transformed host is examined under appropriate conditions. As described above, an EMF will modulate the expression of an operably linked marker sequence.

As used herein, a "diagnostic fragment," DF, means a series of nucleotide molecules which selectively hybridize to *Streptococcus pneumoniae* sequences. DFs can be readily identified by identifying unique sequences within contigs of the *Streptococcus pneumoniae* genome, such as by using well-known computer analysis software, and by generating and testing probes or amplification primers

consisting of the DF sequence in an appropriate diagnostic format which determines amplification or hybridization selectivity.

The sequences falling within the scope of the present invention are not limited to the specific sequences herein described, but also include allelic and species variations thereof. Allelic and species variations can be routinely determined by comparing the sequences provided in SEQ ID NOS:1-391, a representative fragment thereof, or a nucleotide sequence at least 95%, preferably at least 99% and most at least preferably 99.9% identical to SEQ ID NOS:1-391, with a sequence from another isolate of the same species. Furthermore, to accommodate codon variability, the invention includes nucleic acid molecules coding for the same amino acid sequences as do the specific ORFs disclosed herein. In other words, in the coding region of an ORF, substitution of one codon for another which encodes the same amino acid is expressly contemplated. Any specific sequence disclosed herein can be readily screened for errors by resequencing a particular fragment, such as an ORF, in both directions (*i.e.*, sequence both strands). Alternatively, error screening can be performed by sequencing corresponding polynucleotides of *Streptococcus pneumoniae* origin isolated by using part or all of the fragments in question as a probe or primer.

Preferred DFs of the present invention comprise at least about 17, preferably at least about 20, and more preferably at least about 50 contiguous nucleotides within an ORF set out in Tables 1-3. Most highly preferred DFs specifically hybridize to a polynucleotide containing the sequence of the ORF from which they are derived. Specific hybridization occurs even under stringent conditions defined elsewhere herein.

Each of the ORFs of the *Streptococcus pneumoniae* genome disclosed in Tables 1, 2 and 3, and the EMFs found 5' to the ORFs, can be used as polynucleotide reagents in numerous ways. For example, the sequences can be used as diagnostic probes or diagnostic amplification primers to detect the presence of a specific microbe in a sample, particularly *Streptococcus pneumoniae*. Especially preferred in this regard are ORFs such as those of Table 3, which do not match previously characterized sequences from other organisms and thus are most likely to be highly selective for *Streptococcus pneumoniae*. Also particularly preferred are ORFs that can be used to distinguish between strains of *Streptococcus pneumoniae*, particularly those that distinguish medically important strain, such as drug-resistant strains.

In addition, the fragments of the present invention, as broadly described, can be used to control gene expression through triple helix formation or antisense DNA or RNA, both of which methods are based on the binding of a polynucleotide sequence to DNA or RNA. Triple helix-formation optimally results in a shut-off of RNA transcription from DNA, while antisense RNA hybridization blocks translation of an mRNA molecule into polypeptide. Information from the sequences of the present invention can be used to design antisense and triple helix-forming oligonucleotides. Polynucleotides suitable for use in these methods are usually 20 to 40 bases in length and are designed to be complementary to a region of the gene involved in transcription, for triple-helix formation, or to the mRNA itself, for antisense inhibition. Both techniques have been demonstrated to be effective in model systems, and the requisite techniques are well known and involve routine procedures. Triple helix techniques are discussed in, for example, Lee *et al.*, *Nucl. Acids Res.* 6:3073 (1979); Cooney *et al.*, *Science* 241:456 (1988); and Dervan *et al.*, *Science* 251:1360 (1991). Antisense techniques in general are discussed in, for instance, Okano, *J. Neurochem.* 56:560 (1991) and *Oligodeoxynucleotides as Antisense Inhibitors of Gene Expression*, CRC Press, Boca Raton, FL (1988)).

The present invention further provides recombinant constructs comprising one or more fragments of the *Streptococcus pneumoniae* genomic fragments and contigs of the present invention. Certain preferred recombinant constructs of the present invention comprise a vector, such as a plasmid or viral vector, into which a fragment of the *Streptococcus pneumoniae* genome has been inserted, in a forward or reverse orientation. In the case of a vector comprising one of the ORFs of the present invention, the vector may further comprise regulatory sequences, including for example, a promoter, operably linked to the ORF. For vectors comprising the EMFs of the present invention, the vector may further comprise a marker sequence or heterologous ORF operably linked to the EMF.

Large numbers of suitable vectors and promoters are known to those of skill in the art and are commercially available for generating the recombinant constructs of the present invention. The following vectors are provided by way of example. Useful bacterial vectors include phagescript, PsiX174, pBluescript SK, pBS KS, pNH8a, pNH16a, pNH18a, pNH46a (available from Stratagene); pTrc99A, pKK223-3, pKK233-3, pDR540, pRIT5 (available from Pharmacia). Useful eukaryotic vectors include pWLneo, pSV2cat, pOG44, pXT1, pSG

(available from Stratagene) pSVK3, pBPV, pMSG, pSVL (available from Pharmacia).

Promoter regions can be selected from any desired gene using CAT (chloramphenicol transferase) vectors or other vectors with selectable markers. Two appropriate vectors are pKK232-8 and pCM7. Particular named bacterial promoters include lacI, lacZ, T3, T7, gpt, lambda PR, and trc. Eukaryotic promoters include CMV immediate early, HSV thymidine kinase, early and late SV40, LTRs from retrovirus, and mouse metallothionein- I. Selection of the appropriate vector and promoter is well within the level of ordinary skill in the art.

The present invention further provides host cells containing any one of the isolated fragments of the *Streptococcus pneumoniae* genomic fragments and contigs of the present invention, wherein the fragment has been introduced into the host cell using known methods. The host cell can be a higher eukaryotic host cell, such as a mammalian cell, a lower eukaryotic host cell, such as a yeast cell, or a procaryotic cell, such as a bacterial cell.

A polynucleotide of the present invention, such as a recombinant construct comprising an ORF of the present invention, may be introduced into the host by a variety of well established techniques that are standard in the art, such as calcium phosphate transfection, DEAE, dextran mediated transfection and electroporation, which are described in, for instance, Davis, L. *et al.*, BASIC METHODS IN MOLECULAR BIOLOGY (1986).

A host cell containing one of the fragments of the *Streptococcus pneumoniae* genomic fragments and contigs of the present invention, can be used in conventional manners to produce the gene product encoded by the isolated fragment (in the case of an ORF) or can be used to produce a heterologous protein under the control of the EMF. The present invention further provides isolated polypeptides encoded by the nucleic acid fragments of the present invention or by degenerate variants of the nucleic acid fragments of the present invention. By "degenerate variant" is intended nucleotide fragments which differ from a nucleic acid fragment of the present invention (*e.g.*, an ORF) by nucleotide sequence but, due to the degeneracy of the Genetic Code, encode an identical polypeptide sequence.

Preferred nucleic acid fragments of the present invention are the ORFs and subfragments thereof depicted in Tables 2 and 3 which encode proteins.

A variety of methodologies known in the art can be utilized to obtain any one of the isolated polypeptides or proteins of the present invention. At the simplest level, the amino acid sequence can be synthesized using commercially available peptide synthesizers. This is particularly useful in producing small peptides and fragments of larger polypeptides. Such short fragments as may be obtained most readily by synthesis are useful, for example, in generating antibodies against the native polypeptide, as discussed further below.

In an alternative method, the polypeptide or protein is purified from bacterial cells which naturally produce the polypeptide or protein. One skilled in the art can readily employ well-known methods for isolating polypeptides and proteins to isolate and purify polypeptides or proteins of the present invention produced naturally by a bacterial strain, or by other methods. Methods for isolation and purification that can be employed in this regard include, but are not limited to, immunochromatography, HPLC, size-exclusion chromatography, ion-exchange chromatography, and immuno-affinity chromatography.

The polypeptides and proteins of the present invention also can be purified from cells which have been altered to express the desired polypeptide or protein. As used herein, a cell is said to be altered to express a desired polypeptide or protein when the cell, through genetic manipulation, is made to produce a polypeptide or protein which it normally does not produce or which the cell normally produces at a lower level. Those skilled in the art can readily adapt procedures for introducing and expressing either recombinant or synthetic sequences into eukaryotic or prokaryotic cells in order to generate a cell which produces one of the polypeptides or proteins of the present invention.

Any host/vector system can be used to express one or more of the ORFs of the present invention. These include, but are not limited to, eukaryotic hosts such as HeLa cells, CV-1 cell, COS cells, and Sf9 cells, as well as prokaryotic host such as *E. coli* and *B. subtilis*. The most preferred cells are those which do not normally express the particular polypeptide or protein or which expresses the polypeptide or protein at low natural level.

"Recombinant," as used herein, means that a polypeptide or protein is derived from recombinant (*e.g.*, microbial or mammalian) expression systems. "Microbial" refers to recombinant polypeptides or proteins made in bacterial or fungal (*e.g.*, yeast) expression systems. As a product, "recombinant microbial" defines a polypeptide or protein essentially free of native endogenous substances and unaccompanied by associated native glycosylation. Polypeptides or proteins expressed in most bacterial cultures, *e.g.*, *E. coli*, will be free of glycosylation modifications; polypeptides or proteins expressed in yeast will have a glycosylation pattern different from that expressed in mammalian cells.

"Nucleotide sequence" refers to a heteropolymer of deoxyribonucleotides. Generally, DNA segments encoding the polypeptides and proteins provided by this invention are assembled from fragments of the *Streptococcus pneumoniae* genome and short oligonucleotide linkers, or from a series of oligonucleotides, to provide a synthetic gene which is capable of being expressed in a recombinant transcriptional unit comprising regulatory elements derived from a microbial or viral operon.

Recombinant expression vehicle or vector" refers to a plasmid or phage or virus or vector, for expressing a polypeptide from a DNA (RNA) sequence. The expression vehicle can comprise a transcriptional unit comprising an assembly of (1) a genetic regulatory elements necessary for gene expression in the host, including elements required to initiate and maintain transcription at a level sufficient for suitable expression of the desired polypeptide, including, for example, promoters and, where necessary, an enhancer and a polyadenylation signal; (2) a structural or coding sequence which is transcribed into mRNA and translated into protein, and (3) appropriate signals to initiate translation at the beginning of the desired coding region and terminate translation at its end. Structural units intended for use in yeast or eukaryotic expression systems preferably include a leader sequence enabling extracellular secretion of translated protein by a host cell. Alternatively, where recombinant protein is expressed without a leader or transport sequence, it may include an N-terminal methionine residue. This residue may or may not be subsequently cleaved from the expressed recombinant protein to provide a final product.

"Recombinant expression system" means host cells which have stably integrated a recombinant transcriptional unit into chromosomal DNA or carry the recombinant transcriptional unit extra chromosomally. The cells can be prokaryotic or eukaryotic. Recombinant expression systems as defined herein will express

heterologous polypeptides or proteins upon induction of the regulatory elements linked to the DNA segment or synthetic gene to be expressed.

Mature proteins can be expressed in mammalian cells, yeast, bacteria, or other cells under the control of appropriate promoters. Cell-free translation systems can also be employed to produce such proteins using RNAs derived from the DNA constructs of the present invention. Appropriate cloning and expression vectors for use with prokaryotic and eukaryotic hosts are described in Sambrook *et al.*, *Molecular Cloning: A Laboratory Manual*, 2nd Edition, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York (1989), the disclosure of which is hereby incorporated by reference in its entirety.

Generally, recombinant expression vectors will include origins of replication and selectable markers permitting transformation of the host cell, *e.g.*, the ampicillin resistance gene of *E. coli* and *S. cerevisiae* TRP1 gene, and a promoter derived from a highly expressed gene to direct transcription of a downstream structural sequence. Such promoters can be derived from operons encoding glycolytic enzymes such as 3- phosphoglycerate kinase (PGK), alpha-factor, acid phosphatase, or heat shock proteins, among others. The heterologous structural sequence is assembled in appropriate phase with translation initiation and termination sequences, and preferably, a leader sequence capable of directing secretion of translated protein into the periplasmic space or extracellular medium. Optionally, the heterologous sequence can encode a fusion protein including an N-terminal identification peptide imparting desired characteristics, *e.g.*, stabilization or simplified purification of expressed recombinant product.

Useful expression vectors for bacterial use are constructed by inserting a structural DNA sequence encoding a desired protein together with suitable translation initiation and termination signals in operable reading phase with a functional promoter. The vector will comprise one or more phenotypic selectable markers and an origin of replication to ensure maintenance of the vector and, when desirable, provide amplification within the host.

Suitable prokaryotic hosts for transformation include strains of *E. coli*, *B. subtilis*, *Salmonella typhimurium* and various species within the genera *Pseudomonas* and *Streptomyces*. Others may, also be employed as a matter of choice.

As a representative but non-limiting example, useful expression vectors for bacterial use can comprise a selectable marker and bacterial origin of replication

derived from commercially available plasmids comprising genetic elements of the well known cloning vector pBR322 (ATCC 37017). Such commercial vectors include, for example, pKK223-3 (available from Pharmacia Fine Chemicals, Uppsala, Sweden) and GEM 1 (available from Promega Biotec, Madison, WI, USA). These pBR322 "backbone" sections are combined with an appropriate promoter and the structural sequence to be expressed.

Following transformation of a suitable host strain and growth of the host strain to an appropriate cell density, the selected promoter, where it is inducible, is derepressed or induced by appropriate means (*e.g.*, temperature shift or chemical induction) and cells are cultured for an additional period to provide for expression of the induced gene product. Thereafter cells are typically harvested, generally by centrifugation, disrupted to release expressed protein, generally by physical or chemical means, and the resulting crude extract is retained for further purification.

Various mammalian cell culture systems can also be employed to express recombinant protein. Examples of mammalian expression systems include the COS-7 lines of monkey kidney fibroblasts, described in Gluzman, *Cell* 23:175 (1981), and other cell lines capable of expressing a compatible vector, for example, the C127, 3T3, CHO, HeLa and BHK cell lines.

Mammalian expression vectors will comprise an origin of replication, a suitable promoter and enhancer, and also any necessary ribosome binding sites, polyadenylation site, splice donor and acceptor sites, transcriptional termination sequences, and 5' flanking nontranscribed sequences. DNA sequences derived from the SV40 viral genome, for example, SV40 origin, early promoter, enhancer, splice, and polyadenylation sites may be used to provide the required nontranscribed genetic elements.

Recombinant polypeptides and proteins produced in bacterial culture is usually isolated by initial extraction from cell pellets, followed by one or more salting-out, aqueous ion exchange or size exclusion chromatography steps. Microbial cells employed in expression of proteins can be disrupted by any convenient method, including freeze-thaw cycling, sonication, mechanical disruption, or use of cell lysing agents. Protein refolding steps can be used, as necessary, in completing configuration of the mature protein. Finally, high performance liquid chromatography (HPLC) can be employed for final purification steps.

The present invention further includes isolated polypeptides, proteins and nucleic acid molecules which are substantially equivalent to those herein described. As used herein, substantially equivalent can refer both to nucleic acid and amino acid sequences, for example a mutant sequence, that varies from a reference
5 sequence by one or more substitutions, deletions, or additions, the net effect of which does not result in an adverse functional dissimilarity between reference and subject sequences. For purposes of the present invention, sequences having equivalent biological activity, and equivalent expression characteristics are considered substantially equivalent. For purposes of determining equivalence,
10 truncation of the mature sequence should be disregarded.

The invention further provides methods of obtaining homologs from other strains of *Streptococcus pneumoniae*, of the fragments of the *Streptococcus pneumoniae* genome of the present invention and homologs of the proteins encoded by the ORFs of the present invention. As used herein, a sequence or protein of
15 *Streptococcus pneumoniae* is defined as a homolog of a fragment of the *Streptococcus pneumoniae* fragments or contigs or a protein encoded by one of the ORFs of the present invention, if it shares significant homology to one of the fragments of the *Streptococcus pneumoniae* genome of the present invention or a protein encoded by one of the ORFs of the present invention. Specifically, by
20 using the sequence disclosed herein as a probe or as primers, and techniques such as PCR cloning and colony/plaque hybridization, one skilled in the art can obtain homologs.

As used herein, two nucleic acid molecules or proteins are said to "share significant homology" if the two contain regions which possess greater than 85%
25 sequence (amino acid or nucleic acid) homology. Preferred homologs in this regard are those with more than 90% homology. Especially preferred are those with 93% or more homology. Among especially preferred homologs those with 95% or more homology are particularly preferred. Very particularly preferred among these are those with 97% and even more particularly preferred among those
30 are homologs with 99% or more homology. The most preferred homologs among these are those with 99.9% homology or more. It will be understood that, among measures of homology, identity is particularly preferred in this regard.

Region specific primers or probes derived from the nucleotide sequence provided in SEQ ID NOS:1-391 or from a nucleotide sequence at least 95%,
35 particularly at least 99%, especially at least 99.5% identical to a sequence of SEQ

ID NOS:1-391 can be used to prime DNA synthesis and PCR amplification, as well as to identify colonies containing cloned DNA encoding a homolog. Methods suitable to this aspect of the present invention are well known and have been described in great detail in many publications such as, for example, Innis *et al.*,
5 *PCR Protocols*, Academic Press, San Diego, CA (1990)).

When using primers derived from SEQ ID NOS:1-391 or from a nucleotide sequence having an aforementioned identity to a sequence of SEQ ID NOS:1-391, one skilled in the art will recognize that by employing high stringency conditions (*e.g.*, annealing at 50-60°C in 6X SSPC and 50% formamide, and washing at 50-
10 65°C in 0.5X SSPC) only sequences which are greater than 75% homologous to the primer will be amplified. By employing lower stringency conditions (*e.g.*, hybridizing at 35-37°C in 5X SSPC and 40-45% formamide, and washing at 42°C in 0.5X SSPC), sequences which are greater than 40-50% homologous to the primer will also be amplified.

When using DNA probes derived from SEQ ID NOS:1-391, or from a nucleotide sequence having an aforementioned identity to a sequence of SEQ ID NOS:1-391, for colony/plaque hybridization, one skilled in the art will recognize that by employing high stringency conditions (*e.g.*, hybridizing at 50- 65°C in 5X SSPC and 50% formamide, and washing at 50- 65°C in 0.5X SSPC), sequences
20 having regions which are greater than 90% homologous to the probe can be obtained, and that by employing lower stringency conditions (*e.g.*, hybridizing at 35-37°C in 5X SSPC and 40-45% formamide, and washing at 42°C in 0.5X SSPC), sequences having regions which are greater than 35-45% homologous to the probe will be obtained.

25 Any organism can be used as the source for homologs of the present invention so long as the organism naturally expresses such a protein or contains genes encoding the same. The most preferred organism for isolating homologs are bacteria which are closely related to *Streptococcus pneumoniae*.

30 ILLUSTRATIVE USES OF COMPOSITIONS OF THE INVENTION

Each ORF provided in Tables 1 and 2 is identified with a function by homology to a known gene or polypeptide. As a result, one skilled in the art can use the polypeptides of the present invention for commercial, therapeutic and
35 industrial purposes consistent with the type of putative identification of the

polypeptide. Such identifications permit one skilled in the art to use the *Streptococcus pneumoniae* ORFs in a manner similar to the known type of sequences for which the identification is made; for example, to ferment a particular sugar source or to produce a particular metabolite. A variety of reviews illustrative of this aspect of the invention are available, including the following reviews on the industrial use of enzymes, for example, BIOCHEMICAL ENGINEERING AND BIOTECHNOLOGY HANDBOOK, 2nd Ed., MacMillan Publications, Ltd. NY (1991) and BIOCATALYSTS IN ORGANIC SYNTHESSES, Tramper *et al.*, Eds., Elsevier Science Publishers, Amsterdam, The Netherlands (1985). A variety of exemplary uses that illustrate this and similar aspects of the present invention are discussed below.

1. Biosynthetic Enzymes

Open reading frames encoding proteins involved in mediating the catalytic reactions involved in intermediary and macromolecular metabolism, the biosynthesis of small molecules, cellular processes and other functions includes enzymes involved in the degradation of the intermediary products of metabolism, enzymes involved in central intermediary metabolism, enzymes involved in respiration, both aerobic and anaerobic, enzymes involved in fermentation, enzymes involved in ATP proton motor force conversion, enzymes involved in broad regulatory function, enzymes involved in amino acid synthesis, enzymes involved in nucleotide synthesis, enzymes involved in cofactor and vitamin synthesis, can be used for industrial biosynthesis.

The various metabolic pathways present in *Streptococcus pneumoniae* can be identified based on absolute nutritional requirements as well as by examining the various enzymes identified in Table 1-3 and SEQ ID NOS:1-391.

Of particular interest are polypeptides involved in the degradation of intermediary metabolites as well as non-macromolecular metabolism. Such enzymes include amylases, glucose oxidases, and catalase.

Proteolytic enzymes are another class of commercially important enzymes. Proteolytic enzymes find use in a number of industrial processes including the processing of flax and other vegetable fibers, in the extraction, clarification and depectinization of fruit juices, in the extraction of vegetables' oil and in the maceration of fruits and vegetables to give unicellular fruits. A detailed review of the proteolytic enzymes used in the food industry is provided in Rombouts *et al.*,

Symbiosis 21:79 (1986) and Voragen *et al.* in *Biocatalysts In Agricultural Biotechnology*, Whitaker *et al.*, Eds., *American Chemical Society Symposium Series* 389:93 (1989).

The metabolism of sugars is an important aspect of the primary metabolism of *Streptococcus pneumoniae*. Enzymes involved in the degradation of sugars, such as, particularly, glucose, galactose, fructose and xylose, can be used in industrial fermentation. Some of the important sugar transforming enzymes, from a commercial viewpoint, include sugar isomerases such as glucose isomerase. Other metabolic enzymes have found commercial use such as glucose oxidases which produces ketogulonic acid (KGA). KGA is an intermediate in the commercial production of ascorbic acid using the Reichstein's procedure, as described in Krueger *et al.*, *Biotechnology* 6(A), Rhine *et al.*, Eds., Verlag Press, Weinheim, Germany (1984).

Glucose oxidase (GOD) is commercially available and has been used in purified form as well as in an immobilized form for the deoxygenation of beer. See, for instance, Hartmeir *et al.*, *Biotechnology Letters* 1:21 (1979). The most important application of GOD is the industrial scale fermentation of gluconic acid. Market for gluconic acids which are used in the detergent, textile, leather, photographic, pharmaceutical, food, feed and concrete industry, as described, for example, in Bigelis *et al.*, beginning on page 357 in *GENE MANIPULATIONS AND FUNGI*; Benett *et al.*, Eds., Academic Press, New York (1985). In addition to industrial applications, GOD has found applications in medicine for quantitative determination of glucose in body fluids recently in biotechnology for analyzing syrups from starch and cellulose hydrosylates. This application is described in Owusu *et al.*, *Biochem. et Biophysica. Acta.* 872:83 (1986), for instance.

The main sweetener used in the world today is sugar which comes from sugar beets and sugar cane. In the field of industrial enzymes, the glucose isomerase process shows the largest expansion in the market today. Initially, soluble enzymes were used and later immobilized enzymes were developed (Krueger *et al.*, *Biotechnology, The Textbook of Industrial Microbiology*, Sinauer Associated Incorporated, Sunderland, Massachusetts (1990)). Today, the use of glucose- produced high fructose syrups is by far the largest industrial business using immobilized enzymes. A review of the industrial use of these enzymes is provided by Jorgensen, *Starch* 40:307 (1988).

Proteinases, such as alkaline serine proteinases, are used as detergent additives and thus represent one of the largest volumes of microbial enzymes used in the industrial sector. Because of their industrial importance, there is a large body of published and unpublished information regarding the use of these enzymes in industrial processes. (See Faultman *et al.*, Acid Proteases Structure Function and Biology, Tang, J., ed., Plenum Press, New York (1977) and Godfrey *et al.*, Industrial Enzymes, MacMillan Publishers, Surrey, UK (1983) and Hepner *et al.*, Report Industrial Enzymes by 1990, Hel Hepner & Associates, London (1986)).

Another class of commercially usable proteins of the present invention are the microbial lipases, described by, for instance, Macrae *et al.*, *Philosophical Transactions of the Chiral Society of London* 310:227 (1985) and Poserke, *Journal of the American Oil Chemist Society* 61:1758 (1984). A major use of lipases is in the fat and oil industry for the production of neutral glycerides using lipase catalyzed inter-esterification of readily available triglycerides. Application of lipases include the use as a detergent additive to facilitate the removal of fats from fabrics in the course of the washing procedures.

The use of enzymes, and in particular microbial enzymes, as catalyst for key steps in the synthesis of complex organic molecules is gaining popularity at a great rate. One area of great interest is the preparation of chiral intermediates. Preparation of chiral intermediates is of interest to a wide range of synthetic chemists particularly those scientists involved with the preparation of new pharmaceuticals, agrochemicals, fragrances and flavors. (See Davies *et al.*, *Recent Advances in the Generation of Chiral Intermediates Using Enzymes*, CRC Press, Boca Raton, Florida (1990)). The following reactions catalyzed by enzymes are of interest to organic chemists: hydrolysis of carboxylic acid esters, phosphate esters, amides and nitriles, esterification reactions, trans-esterification reactions, synthesis of amides, reduction of alkanones and oxoalkanates, oxidation of alcohols to carbonyl compounds, oxidation of sulfides to sulfoxides, and carbon bond forming reactions such as the aldol reaction.

When considering the use of an enzyme encoded by one of the ORFs of the present invention for biotransformation and organic synthesis it is sometimes necessary to consider the respective advantages and disadvantages of using a microorganism as opposed to an isolated enzyme. Pros and cons of using a whole cell system on the one hand or an isolated partially purified enzyme on the other

hand, has been described in detail by Bud *et al.*, Chemistry in Britain (1987), p. 127.

Amino transferases, enzymes involved in the biosynthesis and metabolism of amino acids, are useful in the catalytic production of amino acids. The advantages of using microbial based enzyme systems is that the amino transferase enzymes catalyze the stereo- selective synthesis of only L-amino acids and generally possess uniformly high catalytic rates. A description of the use of amino transferases for amino acid production is provided by Roselle-David, *Methods of Enzymology* 136:479 (1987).

Another category of useful proteins encoded by the ORFs of the present invention include enzymes involved in nucleic acid synthesis, repair, and recombination.

2. Generation of Antibodies

As described here, the proteins of the present invention, as well as homologs thereof, can be used in a variety of procedures and methods known in the art which are currently applied to other proteins. The proteins of the present invention can further be used to generate an antibody which selectively binds the protein. Such antibodies can be either monoclonal or polyclonal antibodies, as well fragments of these antibodies, and humanized forms.

The invention further provides antibodies which selectively bind to one of the proteins of the present invention and hybridomas which produce these antibodies. A hybridoma is an immortalized cell line which is capable of secreting a specific monoclonal antibody.

In general, techniques for preparing polyclonal and monoclonal antibodies as well as hybridomas capable of producing the desired antibody are well known in the art (Campbell, A. M., *Monoclonal Antibody Technology: Laboratory Techniques In Biochemistry And Molecular Biology*, Elsevier Science Publishers, Amsterdam, The Netherlands (1984); St. Groth *et al.*, *J. Immunol. Methods* 35: 1-21 (1980), Kohler and Milstein, *Nature* 256:495-497 (1975)), the trioma technique, the human B-cell hybridoma technique (Kozbor *et al.*, *Immunology Today* 4:72 (1983), pgs. 77-96 of Cole *et al.*, in *Monoclonal Antibodies And Cancer Therapy*, Alan R. Liss, Inc. (1985)). Any animal (mouse, rabbit, etc.) which is known to produce antibodies can be immunized with the pseudogene polypeptide. Methods for immunization are well known in the art. Such methods

include subcutaneous or interperitoneal injection of the polypeptide. One skilled in the art will recognize that the amount of the protein encoded by the ORF of the present invention used for immunization will vary based on the animal which is immunized, the antigenicity of the peptide and the site of injection.

5 The protein which is used as an immunogen may be modified or administered in an adjuvant in order to increase the protein's antigenicity. Methods of increasing the antigenicity of a protein are well known in the art and include, but are not limited to coupling the antigen with a heterologous protein (such as globulin or galactosidase) or through the inclusion of an adjuvant during immunization.

10 For monoclonal antibodies, spleen cells from the immunized animals are removed, fused with myeloma cells, such as SP2/O-Ag14 myeloma cells, and allowed to become monoclonal antibody producing hybridoma cells.

Any one of a number of methods well known in the art can be used to identify the hybridoma cell which produces an antibody with the desired characteristics. These include screening the hybridomas with an ELISA assay,
15 western blot analysis, or radioimmunoassay (Lutz *et al.*, *Exp. Cell Res.* 175:109-124 (1988)).

Hybridomas secreting the desired antibodies are cloned and the class and subclass is determined using procedures known in the art (Campbell, A. M.,
20 *Monoclonal Antibody Technology: Laboratory Techniques in Biochemistry and Molecular Biology*, Elsevier Science Publishers, Amsterdam, The Netherlands (1984)).

Techniques described for the production of single chain antibodies (U. S. Patent 4,946,778) can be adapted to produce single chain antibodies to proteins of
25 the present invention.

For polyclonal antibodies, antibody containing antisera is isolated from the immunized animal and is screened for the presence of antibodies with the desired specificity using one of the above-described procedures.

The present invention further provides the above- described antibodies in
30 detectably labelled form. Antibodies can be detectably labelled through the use of radioisotopes, affinity labels (such as biotin, avidin, *etc.*), enzymatic labels (such as horseradish peroxidase, alkaline phosphatase, *etc.*) fluorescent labels (such as FITC or rhodamine, *etc.*), paramagnetic atoms, *etc.* Procedures for accomplishing such labeling are well-known in the art, for example see Sternberger *et al.*, *J.*
35 *Histochem. Cytochem.* 18:315 (1970); Bayer, E. A. *et al.*, *Meth. Enzym.* 62:308

(1979); Engval, E. *et al.*, *Immunol.* 109:129 (1972); Goding, J. W., *J. Immunol. Meth.* 13:215 (1976)).

The labeled antibodies of the present invention can be used for *in vitro*, *in vivo*, and in situ assays to identify cells or tissues in which a fragment of the *Streptococcus pneumoniae* genome is expressed.

The present invention further provides the above-described antibodies immobilized on a solid support. Examples of such solid supports include plastics such as polycarbonate, complex carbohydrates such as agarose and sepharose, acrylic resins and such as polyacrylamide and latex beads. Techniques for coupling antibodies to such solid supports are well known in the art (Weir, D. M. *et al.*, "Handbook of Experimental Immunology" 4th Ed., Blackwell Scientific Publications, Oxford, England, Chapter 10 (1986); Jacoby, W. D. *et al.*, *Meth. Enzym.* 34 Academic Press, N. Y. (1974)). The immobilized antibodies of the present invention can be used for *in vitro*, *in vivo*, and in situ assays as well as for immunoaffinity purification of the proteins of the present invention.

3. Diagnostic Assays and Kits

The present invention further provides methods to identify the expression of one of the ORFs of the present invention, or homolog thereof, in a test sample, using one of the DFs or antibodies of the present invention.

In detail, such methods comprise incubating a test sample with one or more of the antibodies or one or more of the DFs of the present invention and assaying for binding of the DFs or antibodies to components within the test sample.

Conditions for incubating a DF or antibody with a test sample vary. Incubation conditions depend on the format employed in the assay, the detection methods employed, and the type and nature of the DF or antibody used in the assay. One skilled in the art will recognize that any one of the commonly available hybridization, amplification or immunological assay formats can readily be adapted to employ the DFs or antibodies of the present invention. Examples of such assays can be found in Chard, T., *An Introduction to Radioimmunoassay and Related Techniques*, Elsevier Science Publishers, Amsterdam, The Netherlands (1986); Bullock, G. R. *et al.*, *Techniques in Immunocytochemistry*, Academic Press, Orlando, FL Vol. 1 (1982), Vol. 2 (1983), Vol. 3 (1985); Tijssen, P., *Practice and Theory of Enzyme Immunoassays: Laboratory Techniques in Biochemistry and*

Molecular Biology, Elsevier Science Publishers, Amsterdam, The Netherlands (1985).

The test samples of the present invention include cells, protein or membrane extracts of cells, or biological fluids such as sputum, blood, serum, plasma, or urine. The test sample used in the above-described method will vary based on the assay format, nature of the detection method and the tissues, cells or extracts used as the sample to be assayed. Methods for preparing protein extracts or membrane extracts of cells are well known in the art and can be readily be adapted in order to obtain a sample which is compatible with the system utilized.

In another embodiment of the present invention, kits are provided which contain the necessary reagents to carry out the assays of the present invention.

Specifically, the invention provides a compartmentalized kit to receive, in close confinement, one or more containers which comprises: (a) a first container comprising one of the DFs or antibodies of the present invention; and (b) one or more other containers comprising one or more of the following: wash reagents, reagents capable of detecting presence of a bound DF or antibody.

In detail, a compartmentalized kit includes any kit in which reagents are contained in separate containers. Such containers include small glass containers, plastic containers or strips of plastic or paper. Such containers allows one to efficiently transfer reagents from one compartment to another compartment such that the samples and reagents are not cross-contaminated, and the agents or solutions of each container can be added in a quantitative fashion from one compartment to another. Such containers will include a container which will accept the test sample, a container which contains the antibodies used in the assay, containers which contain wash reagents (such as phosphate buffered saline, Tris-buffers, *etc.*), and containers which contain the reagents used to detect the bound antibody or DF.

Types of detection reagents include labelled nucleic acid probes, labelled secondary antibodies, or in the alternative, if the primary antibody is labelled, the enzymatic, or antibody binding reagents which are capable of reacting with the labelled antibody. One skilled in the art will readily recognize that the disclosed DFs and antibodies of the present invention can be readily incorporated into one of the established kit formats which are well known in the art.

4. Screening Assay for Binding Agents

Using the isolated proteins of the present invention, the present invention further provides methods of obtaining and identifying agents which bind to a protein encoded by one of the ORFs of the present invention or to one of the fragments and the *Streptococcus pneumoniae* fragment and contigs herein
5 described.

In general, such methods comprise steps of:

- (a) contacting an agent with an isolated protein encoded by one of the ORFs of the present invention, or an isolated fragment of the *Streptococcus pneumoniae* genome; and
- 10 (b) determining whether the agent binds to said protein or said fragment.

The agents screened in the above assay can be, but are not limited to, peptides, carbohydrates, vitamin derivatives, or other pharmaceutical agents. The agents can be selected and screened at random or rationally selected or designed using protein modeling techniques.

15 For random screening, agents such as peptides, carbohydrates, pharmaceutical agents and the like are selected at random and are assayed for their ability to bind to the protein encoded by the ORF of the present invention.

Alternatively, agents may be rationally selected or designed. As used herein, an agent is said to be "rationally selected or designed" when the agent is
20 chosen based on the configuration of the particular protein. For example, one skilled in the art can readily adapt currently available procedures to generate peptides, pharmaceutical agents and the like capable of binding to a specific peptide sequence in order to generate rationally designed antipeptide peptides, for example see Hurby *et al.*, "Application of Synthetic Peptides: Antisense Peptides," in
25 *Synthetic Peptides, A User's Guide*, W. H. Freeman, NY (1992), pp. 289-307, and Kaspczak *et al.*, *Biochemistry* 28:9230-8 (1989), or pharmaceutical agents, or the like.

In addition to the foregoing, one class of agents of the present invention, as broadly described, can be used to control gene expression through binding to one
30 of the ORFs or EMFs of the present invention. As described above, such agents can be randomly screened or rationally designed/selected. Targeting the ORF or EMF allows a skilled artisan to design sequence specific or element specific agents, modulating the expression of either a single ORF or multiple ORFs which rely on the same EMF for expression control.

One class of DNA binding agents are agents which contain base residues which hybridize or form a triple helix by binding to DNA or RNA. Such agents can be based on the classic phosphodiester, ribonucleic acid backbone, or can be a variety of sulfhydryl or polymeric derivatives which have base attachment capacity.

5 Agents suitable for use in these methods usually contain 20 to 40 bases and are designed to be complementary to a region of the gene involved in transcription (triple helix - see Lee *et al.*, *Nucl. Acids Res.* 6:3073 (1979); Cooney *et al.*, *Science* 241:456 (1988); and Dervan *et al.*, *Science* 251:1360 (1991)) or to the mRNA itself (antisense - Okano, *J. Neurochem.* 56:560 (1991);
10 *Oligodeoxynucleotides as Antisense Inhibitors of Gene Expression*, CRC Press, Boca Raton, FL (1988)). Triple helix- formation optimally results in a shut-off of RNA transcription from DNA; while antisense RNA hybridization blocks translation of an mRNA molecule into polypeptide. Both techniques have been demonstrated to be effective in model systems. Information contained in the
15 sequences of the present invention can be used to design antisense and triple helix-forming oligonucleotides, and other DNA binding agents.

5. Pharmaceutical Compositions and Vaccines

The present invention further provides pharmaceutical agents which can be
20 used to modulate the growth or pathogenicity of *Streptococcus pneumoniae*, or another related organism, *in vivo* or *in vitro*. As used herein, a "pharmaceutical agent" is defined as a composition of matter which can be formulated using known techniques to provide a pharmaceutical compositions. As used herein, the "pharmaceutical agents of the present invention" refers the pharmaceutical agents
25 which are derived from the proteins encoded by the ORFs of the present invention or are agents which are identified using the herein described assays.

As used herein, a pharmaceutical agent is said to "modulate the growth pathogenicity of *Streptococcus pneumoniae* or a related organism, *in vivo* or *in vitro*," when the agent reduces the rate of growth, rate of division, or viability of
30 the organism in question. The pharmaceutical agents of the present invention can modulate the growth or pathogenicity of an organism in many fashions, although an understanding of the underlying mechanism of action is not needed to practice the use of the pharmaceutical agents of the present invention. Some agents will modulate the growth by binding to an important protein thus blocking the biological
35 activity of the protein, while other agents may bind to a component of the outer

surface of the organism blocking attachment or rendering the organism more prone to act the bodies nature immune system. Alternatively, the agent may comprise a protein encoded by one of the ORFs of the present invention and serve as a vaccine. The development and use of a vaccine based on outer membrane components are well known in the art.

As used herein, a "related organism" is a broad term which refers to any organism whose growth can be modulated by one of the pharmaceutical agents of the present invention. In general, such an organism will contain a homolog of the protein which is the target of the pharmaceutical agent or the protein used as a vaccine. As such, related organisms do not need to be bacterial but may be fungal or viral pathogens.

The pharmaceutical agents and compositions of the present invention may be administered in a convenient manner, such as by the oral, topical, intravenous, intraperitoneal, intramuscular, subcutaneous, intranasal or intradermal routes. The pharmaceutical compositions are administered in an amount which is effective for treating and/or prophylaxis of the specific indication. In general, they are administered in an amount of at least about 1 mg/kg body weight and in most cases they will be administered in an amount not in excess of about 1 g/kg body weight per day. In most cases, the dosage is from about 0.1 mg/kg to about 10 g/kg body weight daily, taking into account the routes of administration, symptoms, *etc.*

The agents of the present invention can be used in native form or can be modified to form a chemical derivative. As used herein, a molecule is said to be a "chemical derivative" of another molecule when it contains additional chemical moieties not normally a part of the molecule. Such moieties may improve the molecule's solubility, absorption, biological half life, *etc.* The moieties may alternatively decrease the toxicity of the molecule, eliminate or attenuate any undesirable side effect of the molecule, *etc.* Moieties capable of mediating such effects are disclosed in, among other sources, REMINGTON'S PHARMACEUTICAL SCIENCES (1980) cited elsewhere herein.

For example, such moieties may change an immunological character of the functional derivative, such as affinity for a given antibody. Such changes in immunomodulation activity are measured by the appropriate assay, such as a competitive type immunoassay. Modifications of such protein properties as redox or thermal stability, biological half-life, hydrophobicity, susceptibility to proteolytic degradation or the tendency to aggregate with carriers or into multimers also may

be effected in this way and can be assayed by methods well known to the skilled artisan.

The therapeutic effects of the agents of the present invention may be obtained by providing the agent to a patient by any suitable means (*e.g.*, inhalation, intravenously, intramuscularly, subcutaneously, enterally, or parenterally). It is preferred to administer the agent of the present invention so as to achieve an effective concentration within the blood or tissue in which the growth of the organism is to be controlled. To achieve an effective blood concentration, the preferred method is to administer the agent by injection. The administration may be by continuous infusion, or by single or multiple injections.

In providing a patient with one of the agents of the present invention, the dosage of the administered agent will vary depending upon such factors as the patient's age, weight, height, sex, general medical condition, previous medical history, *etc.* In general, it is desirable to provide the recipient with a dosage of agent which is in the range of from about 1 pg/kg to 10 mg/kg (body weight of patient), although a lower or higher dosage may be administered. The therapeutically effective dose can be lowered by using combinations of the agents of the present invention or another agent.

As used herein, two or more compounds or agents are said to be administered "in combination" with each other when either (1) the physiological effects of each compound, or (2) the serum concentrations of each compound can be measured at the same time. The composition of the present invention can be administered concurrently with, prior to, or following the administration of the other agent.

The agents of the present invention are intended to be provided to recipient subjects in an amount sufficient to decrease the rate of growth (as defined above) of the target organism.

The administration of the agent(s) of the invention may be for either a "prophylactic" or "therapeutic" purpose. When provided prophylactically, the agent(s) are provided in advance of any symptoms indicative of the organisms growth. The prophylactic administration of the agent(s) serves to prevent, attenuate, or decrease the rate of onset of any subsequent infection. When provided therapeutically, the agent(s) are provided at (or shortly after) the onset of an indication of infection. The therapeutic administration of the compound(s)

serves to attenuate the pathological symptoms of the infection and to increase the rate of recovery.

The agents of the present invention are administered to a subject, such as a mammal, or a patient, in a pharmaceutically acceptable form and in a therapeutically effective concentration. A composition is said to be "pharmacologically acceptable" if its administration can be tolerated by a recipient patient. Such an agent is said to be administered in a "therapeutically effective amount" if the amount administered is physiologically significant. An agent is physiologically significant if its presence results in a detectable change in the physiology of a recipient patient.

The agents of the present invention can be formulated according to known methods to prepare pharmaceutically useful compositions, whereby these materials, or their functional derivatives, are combined in a mixture with a pharmaceutically acceptable carrier vehicle. Suitable vehicles and their formulation, inclusive of other human proteins, *e.g.*, human serum albumin, are described, for example, in REMINGTON'S PHARMACEUTICAL SCIENCES, 16th Ed., Osol, A., Ed., Mack Publishing, Easton PA (1980). In order to form a pharmaceutically acceptable composition suitable for effective administration, such compositions will contain an effective amount of one or more of the agents of the present invention, together with a suitable amount of carrier vehicle.

Additional pharmaceutical methods may be employed to control the duration of action. Control release preparations may be achieved through the use of polymers to complex or absorb one or more of the agents of the present invention. The controlled delivery may be effectuated by a variety of well known techniques, including formulation with macromolecules such as, for example, polyesters, polyamino acids, polyvinyl, pyrrolidone, ethylenevinylacetate, methylcellulose, carboxymethylcellulose, or protamine, sulfate, adjusting the concentration of the macromolecules and the agent in the formulation, and by appropriate use of methods of incorporation, which can be manipulated to effectuate a desired time course of release. Another possible method to control the duration of action by controlled release preparations is to incorporate agents of the present invention into particles of a polymeric material such as polyesters, polyamino acids, hydrogels, poly(lactic acid) or ethylene vinylacetate copolymers. Alternatively, instead of incorporating these agents into polymeric particles, it is possible to entrap these materials in microcapsules prepared, for example, by coacervation techniques or by interfacial polymerization with, for example, hydroxymethylcellulose or gelatine-

microcapsules and poly(methylmethacrylate) microcapsules, respectively, or in colloidal drug delivery systems, for example, liposomes, albumin microspheres, microemulsions, nanoparticles, and nanocapsules or in macroemulsions. Such techniques are disclosed in REMINGTON'S PHARMACEUTICAL SCIENCES
5 (1980).

The invention further provides a pharmaceutical pack or kit comprising one or more containers filled with one or more of the ingredients of the pharmaceutical compositions of the invention. Associated with such container(s) can be a notice in the form prescribed by a governmental agency regulating the manufacture, use or
10 sale of pharmaceuticals or biological products, which notice reflects approval by the agency of manufacture, use or sale for human administration.

In addition, the agents of the present invention may be employed in conjunction with other therapeutic compounds.

15 6. Shot-Gun Approach to Megabase DNA Sequencing

The present invention further demonstrates that a large sequence can be sequenced using a random shotgun approach. This procedure, described in detail in the examples that follow, has eliminated the up front cost of isolating and ordering overlapping or contiguous subclones prior to the start of the sequencing
20 protocols.

Certain aspects of the present invention are described in greater detail in the examples that follow. The examples are provided by way of illustration. Other aspects and embodiments of the present invention are contemplated by the inventors, as will be clear to those of skill in the art from reading the present
25 disclosure.

ILLUSTRATIVE EXAMPLES

LIBRARIES AND SEQUENCING

30 1. Shotgun Sequencing Probability Analysis

The overall strategy for a shotgun approach to whole genome sequencing follows from the Lander and Waterman (Landerman and Waterman, *Genomics* 2:231 (1988)) application of the equation for the Poisson distribution. According to this treatment, the probability, P , that any given base in a sequence of size L , in
35 nucleotides, is not sequenced after a certain amount, n , in nucleotides, of random

sequence has been determined can be calculated by the equation $P = e^{-m}$, where m is L/n , the fold coverage. For instance, for a genome of 2.8 Mb, $m=1$ when 2.8 Mb of sequence has been randomly generated (1X coverage). At that point, $P = e^{-1} = 0.37$. The probability that any given base has not been sequenced is the same as the probability that any region of the whole sequence L has not been determined and, therefore, is equivalent to the fraction of the whole sequence that has yet to be determined. Thus, at one-fold coverage, approximately 37% of a polynucleotide of size L , in nucleotides has not been sequenced. When 14 Mb of sequence has been generated, coverage is 5X for a 2.8 Mb and the unsequenced fraction drops to .0067 or 0.67%. 5X coverage of a 2.8 Mb sequence can be attained by sequencing approximately 17,000 random clones from both insert ends with an average sequence read length of 410 bp.

Similarly, the total gap length, G , is determined by the equation $G = Le^{-m}$, and the average gap size, g , follows the equation, $g = L/n$. Thus, 5X coverage leaves about 240 gaps averaging about 82 bp in size in a sequence of a polynucleotide 2.8 Mb long.

The treatment above is essentially that of Lander and Waterman, *Genomics* 2: 231 (1988).

2. Random Library Construction

In order to approximate the random model described above during actual sequencing, a nearly ideal library of cloned genomic fragments is required. The following library construction procedure was developed to achieve this end.

Streptococcus pneumoniae DNA is prepared by phenol extraction. A mixture containing 200 µg DNA in 1.0 ml of 300 mM sodium acetate, 10 mM Tris-HCl, 1 mM Na-EDTA, 50% glycerol is processed through a nebulizer (IPI Medical Products) with a stream of nitrogen adjusted to 35 Kpa for 2 minutes. The sonicated DNA is ethanol precipitated and redissolved in 500 µl TE buffer.

To create blunt-ends, a 100 µl aliquot of the resuspended DNA is digested with 5 units of BAL31 nuclease (New England BioLabs) for 10 min at 30°C in 200 µl BAL31 buffer. The digested DNA is phenol-extracted, ethanol-precipitated, redissolved in 100 µl TE buffer, and then size-fractionated by electrophoresis through a 1.0% low melting temperature agarose gel. The section containing DNA fragments 1.6-2.0 kb in size is excised from the gel, and the LGT agarose is melted and the resulting solution is extracted with phenol to separate the agarose from the

DNA. DNA is ethanol precipitated and redissolved in 20 µl of TE buffer for ligation to vector.

A two-step ligation procedure is used to produce a plasmid library with 97% inserts, of which >99% were single inserts. The first ligation mixture (50 µl) contains 2 µg of DNA fragments, 2 µg pUC18 DNA (Pharmacia) cut with SmaI and dephosphorylated with bacterial alkaline phosphatase, and 10 units of T4 ligase (GIBCO/BRL) and is incubated at 14°C for 4 hr. The ligation mixture then is phenol extracted and ethanol precipitated, and the precipitated DNA is dissolved in 20 µl TE buffer and electrophoresed on a 1.0% low melting agarose gel. Discrete bands in a ladder are visualized by ethidium bromide-staining and UV illumination and identified by size as insert (I), vector (v), v+I, v+2i, v+3i, etc. The portion of the gel containing v+I DNA is excised and the v+I DNA is recovered and resuspended into 20 µl TE. The v+I DNA then is blunt-ended by T4 polymerase treatment for 5 min. at 37°C in a reaction mixture (50 µl) containing the v+I linears, 500 µM each of the 4 dNTPs, and 9 units of T4 polymerase (New England BioLabs), under recommended buffer conditions. After phenol extraction and ethanol precipitation the repaired v+I linears are dissolved in 20 µl TE. The final ligation to produce circles is carried out in a 50 µl reaction containing 5 µl of v+I linears and 5 units of T4 ligase at 14°C overnight. After 10 min. at 70°C the following day, the reaction mixture is stored at -20°C.

This two-stage procedure results in a molecularly random collection of single-insert plasmid recombinants with minimal contamination from double-insert chimeras (<1%) or free vector (<3%).

Since deviation from randomness can arise from propagation the DNA in the host, *E. coli* host cells deficient in all recombination and restriction functions (A. Greener, *Strategies* 3 (1):5 (1990)) are used to prevent rearrangements, deletions, and loss of clones by restriction. Furthermore, transformed cells are plated directly on antibiotic diffusion plates to avoid the usual broth recovery phase which allows multiplication and selection of the most rapidly growing cells.

Plating is carried out as follows. A 100 µl aliquot of Epicurian Coli SURE II Supercompetent Cells (Stratagene 200152) is thawed on ice and transferred to a chilled Falcon 2059 tube on ice. A 1.7 µl aliquot of 1.42 M beta-mercaptoethanol is added to the aliquot of cells to a final concentration of 25 mM. Cells are incubated on ice for 10 min. A 1 µl aliquot of the final ligation is added to the cells and incubated on ice for 30 min. The cells are heat pulsed for 30 sec. at 42°C and

placed back on ice for 2 min. The outgrowth period in liquid culture is eliminated from this protocol in order to minimize the preferential growth of any given transformed cell. Instead the transformation mixture is plated directly on a nutrient rich SOB plate containing a 5 ml bottom layer of SOB agar (5% SOB agar: 20 g
5 tryptone, 5 g yeast extract, 0.5 g NaCl, 1.5% Difco Agar per liter of media). The 5 ml bottom layer is supplemented with 0.4 ml of 50 mg/ml ampicillin per 100 ml SOB agar. The 15 ml top layer of SOB agar is supplemented with 1 ml X-Gal (2%), 1 ml MgCl₂ (1 M), and 1 ml MgSO₄ /100 ml SOB agar. The 15 ml top layer is poured just prior to plating. Our titer is approximately 100 colonies/10 µl aliquot
10 of transformation.²⁴

All colonies are picked for template preparation regardless of size. Thus, only clones lost due to "poison" DNA or deleterious gene products are deleted from the library, resulting in a slight increase in gap number over that expected.

15 3. Random DNA Sequencing

High quality double stranded DNA plasmid templates are prepared using a "boiling bead" method developed in collaboration with Advanced Genetic Technology Corp. (Gaithersburg, MD) (Adams *et al.*, *Science* 252:1651 (1991); Adams *et al.*, *Nature* 355:632 (1992)). Plasmid preparation is performed in a 96-
20 well format for all stages of DNA preparation from bacterial growth through final DNA purification. Template concentration is determined using Hoechst Dye and a Millipore Cytofluor. DNA concentrations are not adjusted, but low-yielding templates are identified where possible and not sequenced.

Templates are also prepared from two *Streptococcus pneumoniae* lambda
25 genomic libraries. An amplified library is constructed in the vector Lambda GEM-12 (Promega) and an unamplified library is constructed in Lambda DASH II (Stratagene). In particular, for the unamplified lambda library, *Streptococcus pneumoniae* DNA (> 100 kb) is partially digested in a reaction mixture (200 µl) containing 50 µg DNA, 1X Sau3AI buffer, 20 units Sau3AI for 6 min. at 23°C.
30 The digested DNA was phenol-extracted and electrophoresed on a 0.5% low melting agarose gel at 2V/cm for 7 hours. Fragments from 15 to 25 kb are excised and recovered in a final volume of 6 µl. One µl of fragments is used with 1 µl of DASHII vector (Stratagene) in the recommended ligation reaction. One µl of the ligation mixture is used per packaging reaction following the recommended
35 protocol with the Gigapack II XL Packaging Extract (Stratagene, #227711). Phage

are plated directly without amplification from the packaging mixture (after dilution with 500 μ l of recommended SM buffer and chloroform treatment). Yield is about 2.5×10^3 pfu/ μ l. The amplified library is prepared essentially as above except the lambda GEM-12 vector is used. After packaging, about 3.5×10^4 pfu are plated on the restrictive NM539 host. The lysate is harvested in 2 ml of SM buffer and stored frozen in 7% dimethylsulfoxide. The phage titer is approximately 1×10^9 pfu/ml.

Liquid lysates (100 μ l) are prepared from randomly selected plaques (from the unamplified library) and template is prepared by long-range PCR using T7 and T3 vector-specific primers.

Sequencing reactions are carried out on plasmid and/or PCR templates using the AB Catalyst LabStation with Applied Biosystems PRISM Ready Reaction Dye Primer Cycle Sequencing Kits for the M13 forward (M13-21) and the M13 reverse (M13RP1) primers (Adams *et al.*, *Nature* 368:474 (1994)). Dye terminator sequencing reactions are carried out on the lambda templates on a Perkin-Elmer 9600 Thermocycler using the Applied Biosystems Ready Reaction Dye Terminator Cycle Sequencing kits. T7 and SP6 primers are used to sequence the ends of the inserts from the Lambda GEM-12 library and T7 and T3 primers are used to sequence the ends of the inserts from the Lambda DASH II library. Sequencing reactions are performed by eight individuals using an average of fourteen AB 373 DNA Sequencers per day. All sequencing reactions are analyzed using the Stretch modification of the AB 373, primarily using a 34 cm well-to-read distance. The overall sequencing success rate very approximately is about 85% for M13-21 and M13RP1 sequences and 65% for dye-terminator reactions. The average usable read length is 485 bp for M13-21 sequences, 445bp for M13RP1 sequences, and 375 bp for dye-terminator reactions.

Richards *et al.*, Chapter 28 in AUTOMATED DNA SEQUENCING AND ANALYSIS, M. D. Adams, C. Fields, J. C. Venter, Eds., Academic Press, London, (1994) described the value of using sequence from both ends of sequencing templates to facilitate ordering of contigs in shotgun assembly projects of lambda and cosmid clones. We balance the desirability of both-end sequencing (including the reduced cost of lower total number of templates) against shorter read-lengths for sequencing reactions performed with the M13RP1 (reverse) primer compared to the M13-21 (forward) primer. Approximately one-half of the templates are sequenced from both ends. Random reverse sequencing reactions are

done based on successful forward sequencing reactions. Some M13RP1 sequences are obtained in a semi-directed fashion: M13-21: sequences pointing outward at the ends of contigs are chosen for M13RP1 sequencing in an effort to specifically order contigs.

5

4. Protocol for Automated Cycle Sequencing

The sequencing is carried out using ABI Catalyst robots and AB 373 Automated DNA Sequencers. The Catalyst robot is a publicly available sophisticated pipetting and temperature control robot which has been developed specifically for DNA sequencing reactions. The Catalyst combines pre-aliquoted templates and reaction mixes consisting of deoxy- and dideoxynucleotides, the thermostable Taq DNA polymerase, fluorescently-labelled sequencing primers, and reaction buffer. Reaction mixes and templates are combined in the wells of an aluminum 96-well thermocycling plate. Thirty consecutive cycles of linear amplification (*i.e.*, one primer synthesis) steps are performed including denaturation, annealing of primer and template, and extension; *i.e.*, DNA synthesis. A heated lid with rubber gaskets on the thermocycling plate prevents evaporation without the need for an oil overlay.

Two sequencing protocols are used: one for dye-labelled primers and a second for dye-labelled dideoxy chain terminators. The shotgun sequencing involves use of four dye-labelled sequencing primers, one for each of the four terminator nucleotide. Each dye-primer is labelled with a different fluorescent dye, permitting the four individual reactions to be combined into one lane of the 373 DNA Sequencer for electrophoresis, detection, and base-calling. ABI currently supplies pre-mixed reaction mixes in bulk packages containing all the necessary non-template reagents for sequencing. Sequencing can be done with both plasmid and PCR- generated templates with both dye-primers and dye- terminators with approximately equal fidelity, although plasmid templates generally give longer usable sequences.

Thirty-two reactions are loaded per AB373 Sequencer each day, for a total of 960 samples. Electrophoresis is run overnight following the manufacturer's protocols, and the data is collected for twelve hours. Following electrophoresis and fluorescence detection, the ABI 373 performs automatic lane tracking and base-calling. The lane-tracking is confirmed visually. Each sequence electropherogram (or fluorescence lane trace) is inspected visually and assessed for quality. Trailing

ILLUSTRATIVE APPLICATIONS

1. Production of an Antibody to a *Streptococcus pneumoniae* Protein

Substantially pure protein or polypeptide is isolated from the transfected or transformed cells using any one of the methods known in the art. The protein can also be produced in a recombinant prokaryotic expression system, such as *E. coli*, or can be chemically synthesized. Concentration of protein in the final preparation is adjusted, for example, by concentration on an Amicon filter device, to the level of a few micrograms/ml. Monoclonal or polyclonal antibody to the protein can then be prepared as follows.

2. Monoclonal Antibody Production by Hybridoma Fusion

Monoclonal antibody to epitopes of any of the peptides identified and isolated as described can be prepared from murine hybridomas according to the classical method of Kohler, G. and Milstein, C., *Nature* 256:495 (1975) or modifications of the methods thereof. Briefly, a mouse is repetitively inoculated with a few micrograms of the selected protein over a period of a few weeks. The mouse is then sacrificed, and the antibody producing cells of the spleen isolated. The spleen cells are fused by means of polyethylene glycol with mouse myeloma cells, and the excess unfused cells destroyed by growth of the system on selective media comprising aminopterin (HAT media). The successfully fused cells are diluted and aliquots of the dilution placed in wells of a microtiter plate where growth of the culture is continued. Antibody-producing clones are identified by detection of antibody in the supernatant fluid of the wells by immunoassay procedures, such as ELISA, as originally described by Engvall, E., *Meth. Enzymol.* 70:419 (1980), and modified methods thereof. Selected positive clones can be expanded and their monoclonal antibody product harvested for use. Detailed procedures for monoclonal antibody production are described in Davis, L. *et al.*, *Basic Methods in Molecular Biology*, Elsevier, New York. Section 21-2 (1989).

3. Polyclonal Antibody Production by Immunization

5 Polyclonal antiserum containing antibodies to heterogenous epitopes of a single protein can be prepared by immunizing suitable animals with the expressed protein described above, which can be unmodified or modified to enhance immunogenicity. Effective polyclonal antibody production is affected by many factors related both to the antigen and the host species. For example, small molecules tend to be less immunogenic than others and may require the use of carriers and adjuvant. Also, host animals vary in response to site of inoculations and dose, with both inadequate or excessive doses of antigen resulting in low titer antisera. Small doses (ng level) of antigen administered at multiple intradermal sites appears to be most reliable. An effective immunization protocol for rabbits can be found in Vaitukaitis, J. *et al.*, *J. Clin. Endocrinol. Metab.* 33:988-991 (1971).

15 Booster injections can be given at regular intervals, and antiserum harvested when antibody titer thereof, as determined semi-quantitatively, for example, by double immunodiffusion in agar against known concentrations of the antigen, begins to fall. See, for example, Ouchterlony, O. *et al.*, Chap. 19 in: *Handbook of Experimental Immunology*, Wier, D., ed, Blackwell (1973). Plateau concentration of antibody is usually in the range of 0.1 to 0.2 mg/ml of serum (about 12M). Affinity of the antisera for the antigen is determined by preparing competitive binding curves, as described, for example, by Fisher, D., Chap. 42 in: *Manual of Clinical Immunology*, second edition, Rose and Friedman, eds., Amer. Soc. For Microbiology, Washington, D. C. (1980)

25 Antibody preparations prepared according to either protocol are useful in quantitative immunoassays which determine concentrations of antigen-bearing substances in biological samples; they are also used semi- quantitatively or qualitatively to identify the presence of antigen in a biological sample. In addition, antibodies are useful in various animal models of pneumococcal disease as a means of evaluating the protein used to make the antibody as a potential vaccine target or as a means of evaluating the antibody as a potential immunotherapeutic or immunoprophylactic reagent.

fragment based on oligonucleotide content. The contig and candidate fragment are aligned using a modified version of the Smith-Waterman algorithm which provides for optimal gapped alignments (Waterman, M. S., *Methods in Enzymology* 164:765 (1988)). The contig is extended by the fragment only if strict criteria for the quality of the match are met. The match criteria include the minimum length of overlap, the maximum length of an unmatched end, and the minimum percentage match. These criteria are automatically lowered by the algorithm in regions of minimal coverage and raised in regions with a possible repetitive element. The number of potential overlaps for each fragment determines which fragments are likely to fall into repetitive elements. Fragments representing the boundaries of repetitive elements and potentially chimeric fragments are often rejected based on partial mismatches at the ends of alignments and excluded from the current contig. TIGR Assembler is designed to take advantage of clone size information coupled with sequencing from both ends of each template. It enforces the constraint that sequence fragments from two ends of the same template point toward one another in the contig and are located within a certain range of base pairs (definable for each clone based on the known clone size range for a given library).

The process resulted in 391 contigs as represented by SEQ ID NOs:1-391.

3. Identifying Genes

The predicted coding regions of the *Streptococcus pneumoniae* genome were initially defined with the program GeneMark, which finds ORFs using a probabilistic classification technique. The predicted coding region sequences were used in searches against a database of all nucleotide sequences from GenBank (October, 1997), using the BLASTN search method to identify overlaps of 50 or more nucleotides with at least a 95% identity. Those ORFs with nucleotide sequence matches are shown in Table 1. The ORFs without such matches were translated to protein sequences and compared to a non-redundant database of known proteins generated by combining the Swiss-prot, PIR and GenPept databases. ORFs that matched a database protein with BLASTP probability less than or equal to 0.01 are shown in Table 2. The table also lists assigned functions based on the closest match in the databases. ORFs that did not match protein or nucleotide sequences in the databases at these levels are shown in Table 3.

sequences of low quality are removed and the sequence itself is loaded via software to a Sybase database (archived daily to 8mm tape). Leading vector polylinker sequence is removed automatically by a software program. Average edited lengths of sequences from the standard ABI 373 are around 400 bp and depend mostly on the quality of the template used for the sequencing reaction. ABI 373 Sequencers converted to Stretch Liners provide a longer electrophoresis path prior to fluorescence detection and increase the average number of usable bases to 500-600 bp.

10 **INFORMATICS**

1. Data Management

A number of information management systems for a large-scale sequencing lab have been developed. (For review see, for instance, Kerlavage *et al.*, *Proceedings of the Twenty-Sixth Annual Hawaii International Conference on System Sciences*, IEEE Computer Society Press, Washington D. C., 585 (1993)) The system used to collect and assemble the sequence data was developed using the Sybase relational database management system and was designed to automate data flow wherever possible and to reduce user error. The database stores and correlates all information collected during the entire operation from template preparation to final analysis of the genome. Because the raw output of the ABI 373 Sequencers was based on a Macintosh platform and the data management system chosen was based on a Unix platform, it was necessary to design and implement a variety of multi-user, client-server applications which allow the raw data as well as analysis results to flow seamlessly into the database with a minimum of user effort.

25

2. Assembly

An assembly engine (TIGR Assembler) developed for the rapid and accurate assembly of thousands of sequence fragments was employed to generate contigs. The TIGR assembler simultaneously clusters and assembles fragments of the genome. In order to obtain the speed necessary to assemble more than 10^4 fragments, the algorithm builds a hash table of 12 bp oligonucleotide subsequences to generate a list of potential sequence fragment overlaps. The number of potential overlaps for each fragment determines which fragments are likely to fall into repetitive elements. Beginning with a single seed sequence fragment, TIGR Assembler extends the current contig by attempting to add the best matching

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4. Preparation of PCR Primers and Amplification of DNA

Various fragments of the *Streptococcus pneumoniae* genome, such as those of Tables 1-3 and SEQ ID NOS:1-391 can be used, in accordance with the present invention, to prepare PCR primers for a variety of uses. The PCR primers are preferably at least 15 bases, and more preferably at least 18 bases in length. When selecting a primer sequence, it is preferred that the primer pairs have approximately the same G/C ratio, so that melting temperatures are approximately the same. The PCR primers and amplified DNA of this Example find use in the Examples that follow.

10

5. Gene expression from DNA Sequences Corresponding to ORFs

A fragment of the *Streptococcus pneumoniae* genome provided in Tables 1-3 is introduced into an expression vector using conventional technology. Techniques to transfer cloned sequences into expression vectors that direct protein translation in mammalian, yeast, insect or bacterial expression systems are well known in the art. Commercially available vectors and expression systems are available from a variety of suppliers including Stratagene (La Jolla, California), Promega (Madison, Wisconsin), and Invitrogen (San Diego, California). If desired, to enhance expression and facilitate proper protein folding, the codon context and codon pairing of the sequence may be optimized for the particular expression organism, as explained by Hatfield *et al.*, U. S. Patent No. 5,082,767, incorporated herein by this reference.

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20

The following is provided as one exemplary method to generate polypeptide(s) from cloned ORFs of the *Streptococcus pneumoniae* genome fragment. Bacterial ORFs generally lack a poly A addition signal. The addition signal sequence can be added to the construct by, for example, splicing out the poly A addition sequence from pSG5 (Stratagene) using BglII and SalI restriction endonuclease enzymes and incorporating it into the mammalian expression vector pXT1 (Stratagene) for use in eukaryotic expression systems. pXT1 contains the LTRs and a portion of the gag gene of Moloney Murine Leukemia Virus. The positions of the LTRs in the construct allow efficient stable transfection. The vector includes the Herpes Simplex thymidine kinase promoter and the selectable neomycin gene. The *Streptococcus pneumoniae* DNA is obtained by PCR from the bacterial vector using oligonucleotide primers complementary to the *Streptococcus pneumoniae* DNA and containing restriction endonuclease sequences for PstI incorporated into the 5' primer and BglII at the 5' end of the corresponding *Streptococcus pneumoniae* DNA 3' primer, taking care to ensure that the *Streptococcus pneumoniae* DNA is positioned such that its followed with the poly A addition sequence. The purified fragment obtained from the resulting PCR reaction is digested with PstI, blunt ended with an exonuclease, digested with BglII, purified and ligated to pXT1, now containing a poly A addition sequence and digested BglII.

The ligated product is transfected into mouse NIH 3T3 cells using Lipofectin (Life Technologies, Inc., Grand Island, New York) under conditions outlined in the product specification. Positive transfectants are selected after growing the transfected cells in 600 ug/ml G418 (Sigma, St. Louis, Missouri). The protein is preferably released into the supernatant. However if the protein has membrane binding domains, the protein may additionally be retained within the cell or expression may be restricted to the cell surface. Since it may be necessary to purify and locate the transfected product, synthetic 15-mer peptides synthesized from the predicted *Streptococcus pneumoniae* DNA sequence are injected into mice to generate antibody to the polypeptide encoded by the *Streptococcus pneumoniae* DNA.

Alternatively and if antibody production is not possible, the *Streptococcus pneumoniae* DNA sequence is additionally incorporated into eukaryotic expression vectors and expressed as, for example, a globin fusion. Antibody to the globin moiety then is used to purify the chimeric protein. Corresponding protease
5 cleavage sites are engineered between the globin moiety and the polypeptide encoded by the *Streptococcus pneumoniae* DNA so that the latter may be freed from the formed by simple protease digestion. One useful expression vector for generating globin chimerics is pSG5 (Stratagene). This vector encodes a rabbit globin. Intron II of the rabbit globin gene facilitates splicing of the expressed
10 transcript, and the polyadenylation signal incorporated into the construct increases the level of expression. These techniques are well known to those skilled in the art of molecular biology. Standard methods are published in methods texts such as Davis *et al.*, cited elsewhere herein, and many of the methods are available from the technical assistance representatives from Stratagene, Life Technologies, Inc., or
15 Promega. Polypeptides of the invention also may be produced using *in vitro* translation systems such as *in vitro* Express™ Translation Kit (Stratagene).

While the present invention has been described in some detail for purposes of clarity and understanding, one skilled in the art will appreciate that various changes in form and detail can be made without departing from the true scope of
20 the invention.

All patents, patent applications and publications referred to above are hereby incorporated by reference.

TABLE 1
S. pneumoniae - Coding regions containing known sequences

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	percent ident	HSP nt length	ORF nt length
1	1	437	1003	gb U41735	Streptococcus pneumoniae peptide methionine sulfoxide reductase (msrA) and homoserine kinase homolog (thrB) genes, complete cds	92	200	567
2	5	6169	5720	gb U04047	Streptococcus pneumoniae SS2 dextran glucosidase gene and insertion sequence IS1202 transposase gene, complete cds	96	450	450
2	6	6592	6167	emb Z83335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	98	426	426
3	11	9770	9147	emb Z83335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	94	624	624
3	12	10489	9671	emb Z83335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	91	819	819
3	13	11546	12019	gb U43526	Streptococcus pneumoniae neuraminidase B (nanB) gene, complete cds, and neuraminidase (nanA) gene, partial cds	99	474	474
3	14	12017	13375	gb U43526	Streptococcus pneumoniae neuraminidase B (nanB) gene, complete cds, and neuraminidase (nanA) gene, partial cds	99	1359	1359
3	15	13421	14338	gb U43526	Streptococcus pneumoniae neuraminidase B (nanB) gene, complete cds, and neuraminidase (nanA) gene, partial cds	99	918	918
3	16	14329	15171	gb U43526	Streptococcus pneumoniae neuraminidase B (nanB) gene, complete cds, and neuraminidase (nanA) gene, partial cds	99	843	843
3	17	15132	17282	gb U43526	Streptococcus pneumoniae neuraminidase B (nanB) gene, complete cds, and neuraminidase (nanA) gene, partial cds	99	2151	2151
3	18	17267	18397	gb U43526	Streptococcus pneumoniae neuraminidase B (nanB) gene, complete cds, and neuraminidase (nanA) gene, partial cds	99	1069	1131
4	1	46	1188	emb Y11463 SPDN	Streptococcus pneumoniae dnaG, rpoD, cpoA genes and ORF3 and ORF5	99	1143	1143
4	2	1198	2529	emb Y11463 SPDN	Streptococcus pneumoniae dnaG, rpoD, cpoA genes and ORF3 and ORF5	99	876	1332
5	7	11297	11473	gb U41735	Streptococcus pneumoniae peptide methionine sulfoxide reductase (msrA) and homoserine kinase homolog (thrB) genes, complete cds	82	175	177
6	7	7125	7364	emb Z77726 SPIS	S.pneumoniae DNA for insertion sequence IS1318 (1372 bp)	93	238	240
6	8	7322	7570	emb Z77725 SPIS	S.pneumoniae DNA for insertion sequence IS1381 (966 bp)	95	160	249
6	9	7533	7985	emb Z77725 SPIS	S.pneumoniae DNA for insertion sequence IS1381 (966 bp)	99	453	453
6	23	20197	19733	emb Z83335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	96	465	465
7	10	8305	7682	emb Z83335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	95	624	624

TABLE 1
S. pneumoniae - Coding regions containing known sequences

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	percent ident	HSP nt length	ORF nt length
7	11	9024	8206	emb 283335 SP28	S.pneumoniae dexB, capI(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and aliA gene	95	819	819
10	13	9304	8078	gb L29323	Streptococcus pneumoniae methyl transferase (mtr) gene cluster, complete cds	93	513	1227
11	2	548	919	emb 279691 SOOR	S.pneumoniae yorI(A,B,C,D,E), ftsL, pbpX and regR genes	99	316	372
11	3	892	1980	emb 279691 SOOR	S.pneumoniae yorI(A,B,C,D,E), ftsL, pbpX and regR genes	99	1089	1089
11	5	3040	3477	emb 279691 SOOR	S.pneumoniae yorI(A,B,C,D,E), ftsL, pbpX and regR genes	99	259	438
11	6	3480	3247	emb 279691 SOOR	S.pneumoniae yorI(A,B,C,D,E), ftsL, pbpX and regR genes	99	234	234
11	7	3601	4557	emb 279691 SOOR	S.pneumoniae yorI(A,B,C,D,E), ftsL, pbpX and regR genes	98	957	957
11	8	4506	4886	emb 279691 SOOR	S.pneumoniae yorI(A,B,C,D,E), ftsL, pbpX and regR genes	99	381	381
11	9	4884	7142	emb X16367 SPPB	Streptococcus pneumoniae pbpX gene for penicillin binding protein 2X	99	2259	2259
11	10	7132	8124	emb X16367 SPPB	Streptococcus pneumoniae pbpX gene for penicillin binding protein 2X	98	70	993
13	1	53	1126	gb M31296	S.pneumoniae recP gene, complete cds	99	437	1074
14	3	1837	2148	emb 283335 SP28	S.pneumoniae dexB, capI(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and aliA gene	87	96	312
14	4	2518	2108	gb M36180	Streptococcus pneumoniae transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	98	411	411
15	9	8942	8511	gb U09239	Streptococcus pneumoniae type 19F capsular polysaccharide biosynthesis operon, (cps19ABCDEFHJKLNO) genes, complete cds, and aliA gene, partial cds	89	340	432
17	7	3910	3458	emb 277726 SPIS	S.pneumoniae DNA for insertion sequence IS1318 (1372 bp)	98	453	453
17	8	4304	3873	emb 277727 SPIS	S.pneumoniae DNA for insertion sequence IS1318 (823 bp)	96	382	432
19	1	41	529	emb X94909 SPIG	S.pneumoniae iga gene	75	368	489
19	2	554	757	gb L07752	Streptococcus pneumoniae attachment site (attB), DNA sequence	99	167	204
19	3	946	1827	gb L07752	Streptococcus pneumoniae attachment site (attB), DNA sequence	94	100	882
20	1	937	182	gb U33315	Streptococcus pneumoniae orfL gene, partial cds, competence stimulating peptide precursor (comC), histidine protein kinase (comD) and response regulator (comE) genes, complete cds, trnA-Arg and trnA-Gln genes	99	756	756
20	2	2271	931	gb U33315	Streptococcus pneumoniae orfL gene, partial cds, competence stimulating peptide precursor (comC), histidine protein kinase (comD) and response regulator (comE) genes, complete cds, trnA-Arg and trnA-Gln genes	98	1341	1341

TABLE 1
S. pneumoniae - Coding regions containing known sequences

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	percent ident	HSP nt length	ORF nt length
20	3	3175	2684	gb U76218	Streptococcus pneumoniae competence stimulating peptide precursor ComC (comC), histidine kinase homolog ComD (comD), and response regulator homolog ComE (comE) genes, complete cds	99	492	492
20	4	3322	4527	gb AF000658	Streptococcus pneumoniae R801 tRNA-Arg gene, partial sequence, and putative serine protease (sphtre), SPSPoj (spspoj), initiator protein (spdnaa) and beta subunit of DNA polymerase III (spdnan) genes, complete cds	99	1206	1206
20	5	4573	5343	gb AF000658	Streptococcus pneumoniae R801 tRNA-Arg gene, partial sequence, and putative serine protease (sphtre), SPSPoj (spspoj), initiator protein (spdnaa) and beta subunit of DNA polymerase III (spdnan) genes, complete cds	99	771	771
20	6	5532	6917	gb AF000658	Streptococcus pneumoniae R801 tRNA-Arg gene, partial sequence, and putative serine protease (sphtre), SPSPoj (spspoj), initiator protein (spdnaa) and beta subunit of DNA polymerase III (spdnan) genes, complete cds	99	1386	1386
20	7	6995	8212	gb AF000658	Streptococcus pneumoniae R801 tRNA-Arg gene, partial sequence, and putative serine protease (sphtre), SPSPoj (spspoj), initiator protein (spdnaa) and beta subunit of DNA polymerase III (spdnan) genes, complete cds	99	1218	1218
20	8	8214	8471	gb AF000658	Streptococcus pneumoniae R801 tRNA-Arg gene, partial sequence, and putative serine protease (sphtre), SPSPoj (spspoj), initiator protein (spdnaa) and beta subunit of DNA polymerase III (spdnan) genes, complete cds	98	258	258
20	9	8534	9670	gb AF000658	Streptococcus pneumoniae R801 tRNA-Arg gene, partial sequence, and putative serine protease (sphtre), SPSPoj (spspoj), initiator protein (spdnaa) and beta subunit of DNA polymerase III (spdnan) genes, complete cds	99	134	1137
22	14	11887	12267	emb Z77726 SPIS	S. pneumoniae DNA for insertion sequence ISI318 (1372 bp)	99	226	381
22	15	12708	12256	emb Z77727 SPIS	S. pneumoniae DNA for insertion sequence ISI318 (823 bp)	97	353	453
22	16	13165	12662	emb Z77726 SPIS	S. pneumoniae DNA for insertion sequence ISI318 (1372 bp)	98	504	504
22	23	18398	18910	emb Z86112 SP28	S. pneumoniae genes encoding galacturonosyl transferase and transposase and insertion sequence ISI515	95	463	513
22	24	18829	19299	emb Z86112 SP28	S. pneumoniae genes encoding galacturonosyl transferase and transposase and insertion sequence ISI515	99	443	471
23	5	5624	4203	emb X52474 SPPL	S. pneumoniae ply gene for pneumolysin	99	1422	1422
23	6	6063	5629	gb M17717	S. pneumoniae pneumolysin gene, complete cds	98	197	435
26	1	5500	2	emb X94909 SPIG	S. pneumoniae iga gene	87	3487	5499
26	2	5823	5584	gb U47687	Streptococcus pneumoniae immunoglobulin A1 protease (iga) gene, complete cds	99	151	240
26	3	6878	5685	gb U47687	Streptococcus pneumoniae immunoglobulin A1 protease (iga) gene, complete cds	100	50	1194

TABLE I
S. pneumoniae - Coding regions containing known sequences

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	Percent ident	HSP nt length	ORF nt length
26	8	14498	14854	emb 283335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	99	338	357
26	9	14763	14924	emb 283335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	100	94	162
26	10	14922	15173	gb U04047	Streptococcus pneumoniae SS2 dextran glucosidase gene and insertion sequence IS1202 transposase gene, complete cds	97	242	252
28	1	80	505	emb 283335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	99	426	426
28	2	503	952	gb U04047	Streptococcus pneumoniae SS2 dextran glucosidase gene and insertion sequence IS1202 transposase gene, complete cds	97	450	450
28	3	780	1298	gb U04047	Streptococcus pneumoniae SS2 dextran glucosidase gene and insertion sequence IS1202 transposase gene, complete cds	96	181	519
34	1	207	1523	gb U08611	Streptococcus pneumoniae maltose/maltodextrin uptake (malX) and two maltodextrin permease (malC and malD) genes, complete cds	99	1317	1317
34	2	1477	2367	gb U08611	Streptococcus pneumoniae maltose/maltodextrin uptake (malX) and two maltodextrin permease (malC and malD) genes, complete cds	96	795	891
34	3	2593	3420	gb L21856	Streptococcus pneumoniae malA gene, complete cds; malR gene, complete cds	96	446	828
34	4	2790	2647	gb L21856	Streptococcus pneumoniae malA gene, complete cds; malR gene, complete cds	98	137	144
34	5	3418	4416	gb L21856	Streptococcus pneumoniae malA gene, complete cds; malR gene, complete cds	96	999	999
34	9	7764	7507	gb U41735	Streptococcus pneumoniae peptide methionine sulfoxide reductase (msrA) and homoserine kinase homolog (thrB) genes, complete cds	93	201	258
34	16	10562	10257	emb X63602 SP28	S.pneumoniae mmsA-Box	92	238	306
35	4	1176	1439	emb 283335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	87	248	264
35	5	1458	1961	gb U09239	Streptococcus pneumoniae type 19F capsular polysaccharide biosynthesis operon, (cps19fABCDGHIJKLMNO) genes, complete cds, and alia gene, partial cds	98	264	504
35	17	16172	15477	emb X85787 SP28	S.pneumoniae dexB, cps14A, cps14B, cps14C, cps14D, cps14E, cps14F, cps14G, cps14H, cps14I, cps14J, cps14K, cps14L, cps14M, cps14N, cps14O genes	97	696	696
35	18	16961	16170	emb 283335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	86	792	792
35	19	17620	16871	gb U09239	Streptococcus pneumoniae type 19F capsular polysaccharide biosynthesis operon, (cps19fABCDGHIJKLMNO) genes, complete cds, and alia gene, partial cds	83	750	750

TABLE 1
S. pneumoniae - Coding regions containing known sequences

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	percent ident	HSP nt length	ORF nt length
35	20	19061	17604	emb X85787 SPCP	S.pneumoniae dexB, cps14A, cps14B, cps14C, cps14D, cps14E, cps14F, cps14G, cps14H, cps14I, cps14J, cps14K, cps14L, taaA genes	94	1458	1458
36	19	18960	18352	gb U40786	Streptococcus pneumoniae surface antigen A variant precursor (psaA) and 18 kDa protein genes, complete cds, and ORF1 gene, partial cds	99	609	609
36	20	19934	18966	gb U53509	Streptococcus pneumoniae surface adhesin A precursor (psaA) gene, complete cds	99	969	969
37	1	2743	179	emb 267739 SPPA	S.pneumoniae parC, parE and transposase genes and unknown orf	99	2565	2565
37	2	2985	2824	emb 267739 SPPA	S.pneumoniae parC, parE and transposase genes and unknown orf	100	162	162
37	3	5034	3070	emb 267739 SPPA	S.pneumoniae parC, parE and transposase genes and unknown orf	99	1965	1965
37	4	5134	5790	emb 267739 SPPA	S.pneumoniae parC, parE and transposase genes and unknown orf	99	657	657
37	5	6171	5833	emb 267739 SPPA	S.pneumoniae parC, parE and transposase genes and unknown orf	96	339	339
38	19	12969	13268	gb M28679	S.pneumoniae promoter region DNA	100	64	300
39	2	1256	2137	gb U41735	Streptococcus pneumoniae peptide methionine sulfoxide reductase (msrA) and homoserine kinase homolog (thrB) genes, complete cds	99	882	882
39	3	2405	3370	gb U41735	Streptococcus pneumoniae peptide methionine sulfoxide reductase (msrA) and homoserine kinase homolog (thrB) genes, complete cds	99	966	966
40	9	5253	7208	gb M29686	S.pneumoniae mismatch repair (hexB) gene, complete cds	99	1956	1956
41	1	3	1037	emb 217307 SPRE	S.pneumoniae recA gene encoding RecA	99	1027	1035
41	2	1328	2713	emb 234303 SPCI	Streptococcus pneumoniae cin operon encoding the cinA, recA, dinF, lytA genes, and downstream sequences	99	1386	1386
41	3	3083	4045	gb M13812	S.pneumoniae autolysin (lytA) gene, complete cds	99	963	963
41	4	3272	3096	gb M13812	S.pneumoniae autolysin (lytA) gene, complete cds	100	177	177
41	5	3603	3860	gb M13812	S.pneumoniae autolysin (lytA) gene, complete cds	100	258	258
41	6	4755	5162	gb L36660	Streptococcus pneumoniae ORF, complete cds	98	408	408
41	7	5270	5716	gb L36660	Streptococcus pneumoniae ORF, complete cds	98	447	447
41	8	6112	6918	gb L36660	Streptococcus pneumoniae ORF, complete cds	98	431	807
41	9	6916	7119	gb L36660	Streptococcus pneumoniae ORF, complete cds	100	204	204
41	10	7082	7660	gb L36660	Streptococcus pneumoniae ORF, complete cds	97	552	579
41	11	7680	7979	gb L36660	Streptococcus pneumoniae ORF, complete cds	98	81	300
41	12	9169	8717	emb 277727 SPIS	S.pneumoniae DNA for insertion sequence IS1318 (823 bp)	97	353	453

TABLE 1

S. pneumoniae - Coding regions containing known sequences

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	percent ident	HSP nt length	ORF nt length
41	13	9533	9132	emb 277725 SP18	S.pneumoniae DNA for insertion sequence ISI381 (966 bp)	95	160	402
41	14	9669	9475	emb 282001 SP28	S.pneumoniae pcps gene and open reading frames	100	189	195
44	5	7190	7555	emb 282001 SP28	S.pneumoniae pcps gene and open reading frames	99	366	366
44	6	8059	7607	emb 277726 SP18	S.pneumoniae DNA for insertion sequence ISI318 (1372 bp)	97	453	453
44	7	8423	8022	emb 277725 SP18	S.pneumoniae DNA for insertion sequence ISI381 (966 bp)	95	160	402
44	8	8559	8365	emb 282001 SP28	S.pneumoniae pcps gene and open reading frames	100	189	195
48	9	6480	4687	gb L39074	Streptococcus pneumoniae pyruvate oxidase (spxB) gene, complete cds	99	1794	1794
49	2	231	2603	gb L20561	Streptococcus pneumoniae Exp7 gene, partial cds	100	216	2373
53	6	2407	2156	gb U04047	Streptococcus pneumoniae SS2 dextran glucosidase gene and insertion sequence ISI202 transposase gene, complete cds	97	242	252
53	7	2566	2405	emb 283335 SP28	S.pneumoniae dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and aliA gene	100	94	162
53	8	2831	2475	emb 283335 SP28	S.pneumoniae dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and aliA gene	99	338	357
54	13	12409	11105	emb 283335 SP28	S.pneumoniae dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and aliA gene	67	591	1305
55	22	120488	19949	emb 284379 HS28	S.pneumoniae dfr gene (isolate 92)	99	540	540
61	11	11864	9900	emb 216082 PNAL	Streptococcus pneumoniae aliB gene	98	1965	1965
63	1	3	239	gb M18729	S.pneumoniae mismatch repair protein (hexA) gene, complete cds	100	237	237
63	2	233	2611	gb M18729	S.pneumoniae mismatch repair protein (hexA) gene, complete cds	99	2330	2379
63	3	2557	2823	gb M18729	S.pneumoniae mismatch repair protein (hexA) gene, complete cds	99	266	267
63	4	2958	4664	gb M18729	S.pneumoniae mismatch repair protein (hexA) gene, complete cds	95	69	1707
67	6	3770	3399	gb L20670	Streptococcus pneumoniae hyaluronidase gene, complete cds	96	372	372
67	7	7161	4171	gb L20670	Streptococcus pneumoniae hyaluronidase gene, complete cds	99	2938	2991
70	1	1	702	gb M14340	S.pneumoniae DpnI gene region encoding dpnC and dpnD, complete cds	100	693	702
70	2	678	1160	gb M14340	S.pneumoniae DpnI gene region encoding dpnC and dpnD, complete cds	100	483	483
70	3	2490	1210	gb M14339	S.pneumoniae DpnII gene region encoding dpnM, dpnA, complete cds	98	462	1281
70	7	4230	4424	gb J04234	S.pneumoniae exodeoxyribonuclease (exoA) gene, complete cds	99	147	195
70	8	5197	4316	gb J04234	S.pneumoniae exodeoxyribonuclease (exoA) gene, complete cds	99	881	882

TABLE 1
S. pneumoniae - Coding regions containing known sequences

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	percent ident	HSP nt length	ORF nt length
70	13	8108	9874	gb U20562	Streptococcus pneumoniae Exp8 gene, partial cds	93	234	1767
71	22	27964	28341	emb X63602 SP80	S. pneumoniae mmsA-Box	93	233	378
72	5	4607	3552	emb Z26850 SPAT	S. pneumoniae (M22) genes for ATPase a subunit, ATPase b subunit and ATPase c subunit	97	102	1056
73	1	471	133	emb X63602 SP80	S. pneumoniae mmsA-Box	91	193	339
73	3	3658	977	gb J04479	S. pneumoniae DNA polymerase I (polA) gene, complete cds	99	2682	2682
73	8	4864	5379	gb M36180	Streptococcus pneumoniae transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	98	318	516
77	3	2622	1999	emb Z83335 SP28	S. pneumoniae dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	95	624	624
77	4	3341	2523	emb Z83335 SP28	S. pneumoniae dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	91	819	819
78	1	341	3	emb X77249 SPR6	S. pneumoniae (R6) ciar/ciaH genes	99	339	339
78	2	1095	325	emb X77249 SPR6	S. pneumoniae (R6) ciar/ciaH genes	99	771	771
82	10	11436	10816	gb U90721	Streptococcus pneumoniae signal peptidase I (spi) gene, complete cds	97	621	621
82	11	12402	11434	gb U93576	Streptococcus pneumoniae ribonuclease HII (rnhB) gene, complete cds	98	953	969
82	12	12381	12704	gb U93576	Streptococcus pneumoniae ribonuclease HII (rnhB) gene, complete cds	100	51	324
83	8	3212	3550	emb Z77727 SP15	S. pneumoniae DNA for insertion sequence IS1318 (823 bp)	97	290	339
83	10	4662	6851	gb M36180	Streptococcus pneumoniae transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	99	2190	2190
83	11	6849	8213	gb M36180	Streptococcus pneumoniae transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	99	1365	1365
83	12	8236	9090	gb M36180	Streptococcus pneumoniae transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	99	855	855
83	13	9283	13017	gb L15190	Streptococcus pneumoniae SAICAR synthetase (purC) gene, complete cds	100	107	3735
83	23	22147	23313	gb L36923	Streptococcus pneumoniae beta-N-acetylhexosaminidase (strH) gene, complete cds	98	218	1167
83	24	23268	23450	gb L36923	Streptococcus pneumoniae beta-N-acetylhexosaminidase (strH) gene, complete cds	98	172	183
83	25	27527	23505	gb L36923	Streptococcus pneumoniae beta-N-acetylhexosaminidase (strH) gene, complete cds	99	3826	4023

TABLE 1
S. pneumoniae - Coding regions containing known sequences

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	percent ident	HSP nt length	ORF nt length
83	26	28472	27771	gb L36923	<i>Streptococcus pneumoniae</i> beta-N-acetylhexosaminidase (strH) gene, complete cds	99	416	702
84	4	4554	6173	emb 283335 SP28	<i>S. pneumoniae</i> dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and <i>alia</i> gene	98	697	1620
87	6	5951	5316	emb 277735 SP15	<i>S. pneumoniae</i> DNA for insertion sequence ISI381 (966 bp)	96	439	636
88	5	2957	3511	gb H36180	<i>Streptococcus pneumoniae</i> transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	94	555	555
88	6	3466	4269	gb H36180	<i>Streptococcus pneumoniae</i> transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	94	804	804
89	13	9878	10093	gb H36180	<i>Streptococcus pneumoniae</i> transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	97	211	216
89	14	10062	10412	emb 283335 SP28	<i>S. pneumoniae</i> dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and <i>alia</i> gene	97	335	351
93	10	5303	4941	emb X63602 SP80	<i>S. pneumoniae</i> mmsA-Box	89	237	363
97	4	1708	1520	gb U41735	<i>Streptococcus pneumoniae</i> peptide methionine sulfoxide reductase (msrA) and homoserine kinase homolog (thrB) genes, complete cds	91	140	189
99	1	89	700	emb 283335 SP28	<i>S. pneumoniae</i> dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and <i>alia</i> gene	93	592	612
99	2	1773	775	emb X17337 SPAM	<i>Streptococcus pneumoniae</i> <i>ami</i> locus conferring aminopterin resistance	99	998	999
99	3	2794	1712	emb X17337 SPAM	<i>Streptococcus pneumoniae</i> <i>ami</i> locus conferring aminopterin resistance	99	1083	1083
99	4	3732	2788	emb X17337 SPAM	<i>Streptococcus pneumoniae</i> <i>ami</i> locus conferring aminopterin resistance	100	945	945
99	5	5249	3714	emb X17337 SPAM	<i>Streptococcus pneumoniae</i> <i>ami</i> locus conferring aminopterin resistance	100	1536	1536
99	6	7262	5277	emb X17337 SPAM	<i>Streptococcus pneumoniae</i> <i>ami</i> locus conferring aminopterin resistance	99	1986	1986
101	1	216	1538	emb X54225 SPEN	<i>S. pneumoniae</i> epuA and endA genes for 7 kDa protein and membrane endonuclease	99	146	1323
101	2	1492	1719	emb X54225 SPEN	<i>S. pneumoniae</i> epuA <i>ami</i> and endA genes for 7 kDa protein and membrane endonuclease	99	228	228
101	3	1694	1855	emb X54225 SPEN	<i>S. pneumoniae</i> epuA and endA genes for 7 kDa protein and membrane endonuclease	100	162	162
101	4	1701	2582	emb X54225 SPEN	<i>S. pneumoniae</i> epuA and endA genes for 7 kDa protein and membrane endonuclease	100	882	882
103	7	5556	5041	emb 295914 SP29	<i>Streptococcus pneumoniae</i> <i>sodA</i> gene	100	396	516
104	2	1347	1556	emb 277727 SP15	<i>S. pneumoniae</i> DNA for insertion sequence ISI318 (823 bp)	83	206	210

TABLE 1

S. pneumoniae - Coding regions containing known sequences

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	Percent ident	HSP nt length	ORF nt length
105	5	5381	5028	emb Z67739 SPPA	S.pneumoniae parC, parE and transposase genes and unknown orf	98	353	354
105	6	6089	5379	emb Z67739 SPPA	S.pneumoniae parC, parE and transposase genes and unknown orf	98	84	711
107	4	2785	1880	emb X16022 SPPE	S.pneumoniae penA gene	98	72	906
107	5	2913	4988	emb X16022 SPPE	S.pneumoniae penA gene	99	1692	2076
107	6	4981	5595	emb X13136 SPPE	Streptococcus pneumoniae penA gene for penicillin binding protein 2B lacking N-term. (penicillin resistant strain)	91	107	615
108	9	9068	8718	emb Z67739 SPPA	S.pneumoniae parC, parE and transposase genes and unknown orf	95	342	351
108	12	11308	10922	emb Z67739 SPPA	S.pneumoniae parC, parE and transposase genes and unknown orf	99	199	387
109	3	2768	2241	emb Z77725 SPIS	S.pneumoniae DNA for insertion sequence IS1381 (966 bp)	96	61	528
109	4	2688	2855	emb Z77726 SPIS	S.pneumoniae DNA for insertion sequence IS1318 (1372 bp)	96	148	168
109	5	2862	3269	emb Z77727 SPIS	S.pneumoniae DNA for insertion sequence IS1318 (823 bp)	97	353	408
109	6	5320	3584	gb M18729	S.pneumoniae mismatch repair protein (hexA) gene, complete cds	100	371	1737
113	1	431	3	gb M36180	Streptococcus pneumoniae transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	95	429	429
113	10	9788	8532	emb X99400 SPDA	S.pneumoniae dacA gene and ORF	99	1257	1257
113	11	9870	10985	emb X99400 SPDA	S.pneumoniae dacA gene and ORF	99	1116	1116
114	3	2530	2030	gb M36180	Streptococcus pneumoniae transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	95	481	501
115	11	11303	10932	gb U04047	Streptococcus pneumoniae SS2 dextran glucosidase gene and insertion sequence IS1202 transposase gene, complete cds	97	372	372
117	1	897	3302	emb X72967 SPNA	S.pneumoniae nana gene	99	2402	2406
117	2	3277	3831	emb X72967 SPNA	S.pneumoniae nana gene	99	237	555
117	3	4327	3899	gb M36180	Streptococcus pneumoniae transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	98	429	429
121	2	1369	1941	gb U72720	Streptococcus pneumoniae heat shock protein 70 (dnaK) gene, complete cds and DnaJ (dnaJ) gene, partial cds	99	202	573
121	3	2412	4253	gb U72720	Streptococcus pneumoniae heat shock protein 70 (dnaK) gene, complete cds and DnaJ (dnaJ) gene, partial cds	99	1842	1842
122	8	5066	5587	gb U04047	Streptococcus pneumoniae SS2 dextran glucosidase gene and insertion sequence IS1202 transposase gene, complete cds	64	451	522

TABLE 1

S. pneumoniae - Coding regions containing known sequences

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	percent ident	HSP nt length	ORF nt length
125	1	1811	189	gb X36180	Streptococcus pneumoniae transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	92	99	1623
128	15	12496	11204	emb Z83335 SP28	S. pneumoniae dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and allia gene	91	705	1293
134	1	1	492	emb Y10818 SPV1	S. pneumoniae spsA gene	99	203	492
134	2	556	2652	gb AF019904	Streptococcus pneumoniae choline binding protein A (cbpA) gene, partial cds	86	685	2097
134	3	1160	837	emb Y10818 SPV1	S. pneumoniae spsA gene	86	324	324
134	4	3952	2882	gb AF019904	Streptococcus pneumoniae choline binding protein A (cbpA) gene, partial cds	98	215	1071
134	8	7992	9848	gb U12567	Streptococcus pneumoniae P13 glycerol-3-phosphate dehydrogenase (glpD) gene, partial cds, and glycerol uptake facilitator (glpF) and ORF3 genes, complete cds	99	285	1857
134	9	9846	10622	gb U12567	Streptococcus pneumoniae P13 glycerol-3-phosphate dehydrogenase (glpD) gene, partial cds, and glycerol uptake facilitator (glpF) and ORF3 genes, complete cds	99	570	777
134	10	10805	11122	gb U12567	Streptococcus pneumoniae P13 glycerol-3-phosphate dehydrogenase (glpD) gene, partial cds, and glycerol uptake facilitator (glpF) and ORF3 genes, complete cds	100	318	318
137	13	7970	8443	gb U09239	Streptococcus pneumoniae type 19F capsular polysaccharide biosynthesis operon, (cps19fABCDEFHJKLMNO) genes, complete cds, and allia gene, partial cds	90	420	474
137	14	8590	8775	emb Z83335 SP28	S. pneumoniae dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and allia gene	94	174	186
137	15	8773	8967	emb Z83335 SP28	S. pneumoniae dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and allia gene	98	195	195
137	16	9223	9687	emb Z77726 SP15	S. pneumoniae DNA for insertion sequence IS1318 (1372 bp)	96	446	465
137	17	9641	10051	emb Z77727 SP15	S. pneumoniae DNA for insertion sequence IS1318 (823 bp)	96	293	411
139	10	12998	12702	emb X63602 SP80	S. pneumoniae mmsA-Box	90	234	297
141	8	7805	8938	emb Z49988 SPMH	Streptococcus pneumoniae mmsA gene	99	338	1134
141	9	8936	10972	emb Z49988 SPMH	Streptococcus pneumoniae mmsA gene	99	2037	2037
141	10	11472	12467	emb Z49988 SPMH	Streptococcus pneumoniae mmsA gene	100	76	996
142	2	257	814	gb M80215	Streptococcus pneumoniae uvs402 protein gene, complete cds	98	174	558
142	3	787	957	gb M80215	Streptococcus pneumoniae uvs402 protein gene, complete cds	100	142	171
142	4	980	3022	gb M80215	Streptococcus pneumoniae uvs402 protein gene, complete cds	95	1997	2043

TABLE 1

S. pneumoniae - Coding regions containing known sequences

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	percent ident	HSP nt length	ORF nt length
142	5	3020	3595	gb H80215	Streptococcus pneumoniae uvs402 protein gene, complete cds	100	153	576
145	1	1	219	emb Z35135 SPAL	S.pneumoniae alfa gene for amIA-like gene A	97	185	219
145	2	171	1994	gb L20556	Streptococcus pneumoniae plpA gene, partial cds	99	1811	1824
145	3	2287	7599	emb Z47210 SPDE	S.pneumoniae dexB, cap3A, cap3B and cap3C genes and orfs	99	1052	5313
145	4	9934	7766	gb H90527	Streptococcus pneumoniae penicillin-binding protein (ponA) gene, complete cds	99	2169	2169
145	5	10488	9922	gb H90527	Streptococcus pneumoniae penicillin-binding protein (pbnA) gene, complete cds	99	512	567
146	1	159	4	emb Z82002 SP28	S.pneumoniae pcgB and pcgC genes	98	156	156
146	2	344	90	emb Z82002 SP28	S.pneumoniae pcgB and pcgC genes	98	255	255
146	16	11795	10794	emb Z82002 SP28	S.pneumoniae pcgB and pcgC genes	85	276	1002
147	11	10678	10202	emb Z21702 SPUN	S.pneumoniae ung gene and mutX genes encoding uracil-DNA glycosylase and 8-oxodGTP nucleoside triphosphatase	98	477	477
147	12	11338	10676	emb Z21702 SPUN	S.pneumoniae ung gene and mutX genes encoding uracil-DNA glycosylase and 8-oxodGTP nucleoside triphosphatase	99	663	663
148	12	9009	8815	gb U41735	Streptococcus pneumoniae peptide methionine sulfoxide reductase (msrA) and homoserine kinase homolog (thrB) genes, complete cds	90	180	195
156	4	1154	1402	emb X63602 SP80	S.pneumoniae mmsA-Box	94	185	249
159	13	9048	8521	gb H36180	Streptococcus pneumoniae transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	98	526	528
160	1	1	147	emb Z26851 SPAT	S.pneumoniae (R6) genes for ATPase a subunit, ATPase b subunit and ATPase c subunit	100	142	147
160	2	179	898	emb Z26851 SPAT	S.pneumoniae (R6) genes for ATPase a subunit, ATPase b subunit and ATPase c subunit	99	720	720
160	3	906	1406	emb Z26850 SPAT	S.pneumoniae (M222) genes for ATPase a subunit, ATPase b subunit and ATPase c subunit	95	501	501
160	4	1373	1942	emb Z26850 SPAT	S.pneumoniae (M222) genes for ATPase a subunit, ATPase b subunit and ATPase c subunit	87	306	570
161	1	1	984	emb X77249 SPR6	S.pneumoniae (R6) clar/ciaH genes	99	984	984
161	7	6910	7497	emb X83917 SPCY	S.pneumoniae orfgyrB and gyrB gene encoding DNA gyrase B subunit	99	437	588
161	8	7443	9386	emb X83917 SPCY	S.pneumoniae orfgyrB and gyrB gene encoding DNA gyrase B subunit	98	1912	1944
163	1	2	2155	gb L20559	Streptococcus pneumoniae Exp5 gene, partial cds	98	327	2154

TABLE 1

S. pneumoniae - Coding regions containing known sequences

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	percent ident	HSP nt length	ORF nt length
165	1	32	1618	gb J01796	S.pneumoniae malX and malM genes encoding membrane protein and amyloamylase, complete cds, and malP gene encoding phosphorylase	99	1587	1587
165	2	1608	3902	gb J01796	S.pneumoniae malX and malM genes encoding membrane protein and amyloamylase, complete cds, and malP gene encoding phosphorylase	100	280	2295
166	1	378	4	emb Y11463 SPDN	Streptococcus pneumoniae dnaG, rpoD, cpoA genes and ORF3 and ORF5	100	375	375
166	2	1507	320	emb Y11463 SPDN	Streptococcus pneumoniae dnaG, rpoD, cpoA genes and ORF3 and ORF5	99	1188	1188
166	3	3240	1432	emb Y11463 SPDN	Streptococcus pneumoniae dnaG, rpoD, cpoA genes and ORF3 and ORF5	99	563	1809
167	1	1077	328	emb Z71552 SPAD	Streptococcus pneumoniae adcCBA operon	94	155	750
167	2	1844	999	emb Z71552 SPAD	Streptococcus pneumoniae adcCBA operon	98	405	846
167	3	2714	1842	emb Z71552 SPAD	Streptococcus pneumoniae adcCBA operon	97	604	873
167	4	3399	2641	emb Z71552 SPAD	Streptococcus pneumoniae adcCBA operon	99	703	759
168	1	1	2259	gb L20558	Streptococcus pneumoniae Exp4 gene, partial cds	99	282	2259
170	10	7338	7685	emb Z77726 SPIS	S.pneumoniae DNA for insertion sequence IS1318 (1372 bp)	95	315	348
172	6	2462	4981	gb U47625	Streptococcus pneumoniae formate acetyltransferase (exp72) gene, partial cds	97	365	2520
175	1	373	20	gb M36180	Streptococcus pneumoniae transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	89	353	354
175	4	1843	3621	emb Z47210 SPDE	S.pneumoniae dexB, cap3A, cap3B and cap3C genes and orfs	95	89	1779
176	5	3984	2980	emb Z67739 SPPA	S.pneumoniae parC, parE and transposase genes and unknown orf	100	573	1005
178	1	3	425	emb Z67739 SPPA	S.pneumoniae parC, parE and transposase genes and unknown orf	95	423	423
179	1	426	70	emb Z83335 SP28	S.pneumoniae dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	99	338	357
180	3	3084	1855	emb X95718 SPCY	S.pneumoniae gyrA gene	99	381	1230
186	1	714	4	emb Z79691 SOOR	S.pneumoniae yorf(A,B,C,D,E), ftstL, pbpX and regR genes	98	59	711
186	2	2254	608	emb Z79691 SOOR	S.pneumoniae yorf(A,B,C,D,E), ftstL, pbpX and regR genes	98	315	1647
186	3	707	880	emb Z79691 SOOR	S.pneumoniae yorf(A,B,C,D,E), ftstL, pbpX and regR genes	98	174	174
189	1	2	259	gb U72720	Streptococcus pneumoniae heat shock protein 70 (dnaK) gene, complete cds and DnaJ (dnaJ) gene, partial cds	99	258	258
189	2	600	385	gb U72720	Streptococcus pneumoniae heat shock protein 70 (dnaK) gene, complete cds and DnaJ (dnaJ) gene, partial cds	98	204	216

TABLE 1

S. pneumoniae - Coding regions containing known sequences

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	percent ident	HSP nt length	ORF nt length
189	3	1018	851	gb U72720	Streptococcus pneumoniae heat shock protein 70 (dnaK) gene, complete cds and DnaJ (dnaJ) gene, partial cds	99	168	168
189	4	1012	2154	gb U72720	Streptococcus pneumoniae heat shock protein 70 (dnaK) gene, complete cds and DnaJ (dnaJ) gene, partial cds	99	1062	1143
191	9	7829	7524	emb X63602 SP80	S.pneumoniae mmsA-Box	95	234	306
194	1	1	729	gb M36180	Streptococcus pneumoniae transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	91	728	729
199	2	1117	881	emb Z83335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	96	211	237
199	4	1499	1762	emb Z83335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	89	248	264
199	5	1781	2284	emb Z83335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	98	504	504
203	1	1977	337	gb L20563	Streptococcus pneumoniae Exp9 gene, partial cds	99	342	1641
204	1	1145	3	gb L36131	Streptococcus pneumoniae exp10 gene, complete cds, recA gene, 5' end	99	1143	1143
208	1	59	2296	gb U99711	Streptococcus pneumoniae pneumococcal surface protein A PspA (pspA) gene, complete cds	90	471	2238
213	3	2455	2123	emb Z83335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	96	332	333
216	1	368	12	emb Z83335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	99	338	357
216	3	2650	2327	gb M28678	S.pneumoniae promoter sequence DNA	98	86	324
222	1	417	4	emb Z83335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	94	414	414
227	3	5266	4238	emb AJ000336 SP	Streptococcus pneumoniae ldh gene	99	1029	1029
239	1	1	804	gb M31296	S.pneumoniae recP gene, complete cds	95	484	804
247	3	1625	1807	gb M36180	Streptococcus pneumoniae transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	94	178	183
249	3	921	1364	emb Z83335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	94	443	444
253	1	362	3	gb M36180	Streptococcus pneumoniae transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	99	360	360
253	5	1238	2050	emb Z83335 SP28	S.pneumoniae dexB, capl(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	95	420	813

TABLE 1 *S. pneumoniae* - Coding regions containing known sequences

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	Percent ident	HSP nt length	ORF nt length
253	6	2069	2572	emb 283335 SP28	<i>S. pneumoniae</i> dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and <i>alia</i> gene	97	504	504
255	1	3	800	emb 282002 SP28	<i>S. pneumoniae</i> pcgB and pcgC genes	97	531	798
255	2	798	1841	emb 282002 SP28	<i>S. pneumoniae</i> pcgB and pcgC genes	97	672	1044
255	3	2493	1969	emb 267739 SPPA	<i>S. pneumoniae</i> parC, parE and transposase genes and unknown orf	92	435	525
257	2	985	770	emb X17337 SPAM	<i>Streptococcus pneumoniae</i> aml locus conferring aminopterin resistance	96	117	216
257	3	1245	907	gb M36180	<i>Streptococcus pneumoniae</i> transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	97	339	339
267	2	495	1208	gb U16156	<i>Streptococcus pneumoniae</i> dihydropteroate synthase (sulA), dihydrofolate synthetase (sulB), guanosine triphosphate cyclohydrolase (sulC), aldolase-pyrophosphokinase (sulD) genes, complete cds	95	84	714
267	3	1291	2277	gb U16156	<i>Streptococcus pneumoniae</i> dihydropteroate synthase (sulA), dihydrofolate synthetase (sulB), guanosine triphosphate cyclohydrolase (sulC), aldolase-pyrophosphokinase (sulD) genes, complete cds	97	755	987
267	4	2261	3601	gb U16156	<i>Streptococcus pneumoniae</i> dihydropteroate synthase (sulA), dihydrofolate synthetase (sulB), guanosine triphosphate cyclohydrolase (sulC), aldolase-pyrophosphokinase (sulD) genes, complete cds	98	1341	1341
267	5	3561	4136	gb U16156	<i>Streptococcus pneumoniae</i> dihydropteroate synthase (sulA), dihydrofolate synthetase (sulB), guanosine triphosphate cyclohydrolase (sulC), aldolase-pyrophosphokinase (sulD) genes, complete cds	99	576	576
267	6	4164	4949	gb U16156	<i>Streptococcus pneumoniae</i> dihydropteroate synthase (sulA), dihydrofolate synthetase (sulB), guanosine triphosphate cyclohydrolase (sulC), aldolase-pyrophosphokinase (sulD) genes, complete cds	99	748	786
267	7	5544	5140	gb U16156	<i>Streptococcus pneumoniae</i> dihydropteroate synthase (sulA), dihydrofolate synthetase (sulB), guanosine triphosphate cyclohydrolase (sulC), aldolase-pyrophosphokinase (sulD) genes, complete cds	100	186	405
268	4	1793	1990	emb X63602 SP80	<i>S. pneumoniae</i> mmaA-Box	89	194	198
271	1	562	104	gb M29686	<i>S. pneumoniae</i> mismatch repair (hexB) gene, complete cds	93	160	459
291	1	75	524	gb U04047	<i>Streptococcus pneumoniae</i> SS2 dextran glucosidase gene and insertion sequence ISI202 transposase gene, complete cds	96	450	450
291	2	1001	525	emb 283335 SP28	<i>S. pneumoniae</i> dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and <i>alia</i> gene	87	205	477
291	3	807	559	emb 283335 SP28	<i>S. pneumoniae</i> dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and <i>alia</i> gene	90	170	249
291	4	1374	1099	gb M36180	<i>Streptococcus pneumoniae</i> transposase, (comA and comB) and SAICAR synthetase (purC) genes, complete cds	85	264	276

TABLE I

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	percent ident	HSP nt length	ORF nt length
293	1	3	1673	emb 267740 SP0Y	S.pneumoniae gyrB gene and unknown orf	98	553	1671
296	1	1434	151	emb 247210 SPDE	S.pneumoniae dexB, cap1A, cap1B and cap1C genes and orfs	99	430	1284
317	1	157	510	emb 267739 SPPA	S.pneumoniae parC, parE and transposase genes and unknown orf	89	353	354
325	2	1237	485	emb 283335 SP28	S.pneumoniae dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	91	299	753
326	1	1	462	emb 282001 SP28	S.pneumoniae pcpA gene and open reading frames	100	233	462
327	1	603	64	emb 283335 SP28	S.pneumoniae dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	94	89	540
334	1	153	545	gb U41735	Streptococcus pneumoniae peptide methionine sulfoxide reductase (msrA) and homoserine kinase homolog (thrB) genes, complete cds	87	91	393
336	1	308	93	emb 226850 SPAT	S.pneumoniae (H222) genes for ATPase a subunit, ATPase b subunit and ATPase c subunit	97	102	216
360	1	1	519	emb 267739 SPPA	S.pneumoniae parC, parE and transposase genes and unknown orf	95	435	519
360	4	1598	1960	emb 283335 SP28	S.pneumoniae dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	94	353	363
362	1	673	2	emb 283335 SP28	S.pneumoniae dexB, cap1(A,B,C,D,E,F,G,H,I,J,K) genes, dTDP-rhamnose biosynthesis genes and alia gene	95	63	672
362	2	1168	728	gb U04047	Streptococcus pneumoniae SS2 dextran glucosidase gene and insertion sequence IS1202 transposase gene, complete cds	96	441	441
384	1	347	111	emb X85787 SPCP	S.pneumoniae dexB, cps14A, cps14B, cps14C, cps14D, cps14E, cps14F, cps14G, cps14H, cps14I, cps14J, cps14K, cps14L, tsaA genes	94	54	237

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
228	2	1760	1942	pirF60663 F606	translation elongation factor Tu - Streptococcus oralis	100	100	183
319	1	2	205	gi 984827	neomycin phosphotransferase [Cloning vector pBSL39]	100	100	204
260	1	2	1138	pirF60663 F606	translation elongation factor Tu - Streptococcus oralis	99	98	1137
25	2	486	1394	gi 1574495	hypothetical [Haemophilus influenzae]	98	96	909
94	2	685	1002	gi 310627	phosphoenolpyruvate:sugar phosphotransferase system HPr [Streptococcus mutans]	98	93	318
312	1	190	2	gi 347999	ATP-dependent protease proteolytic subunit [Streptococcus salivarius]	98	95	189
329	1	1	807	gi 924848	inosine monophosphate dehydrogenase [Streptococcus pyogenes]	98	94	807
336	2	290	589	gi 987050	lacZ gene product [unidentified cloning vector]	98	98	300
181	9	5948	7366	gi 153755	phospho-beta-D-galactosidase [EC 3.2.1.85] [Lactococcus lactis cremoris]	97	94	1419
312	2	1044	361	gi 347998	uracil phosphoribosyltransferase [Streptococcus salivarius]	97	88	684
32	8	6575	7486	sp P37214 ERA_S	GTP-BINDING PROTEIN ERA HOMOLOG	96	91	912
94	3	951	2741	gi 153615	phosphoenolpyruvate:sugar phosphotransferase system enzyme I [Streptococcus salivarius]	96	92	1791
127	1	1	168	gi 581299	initiation factor IF-1 [Lactococcus lactis]	96	89	168
128	14	10438	11154	gi 1276873	DeoD [Streptococcus thermophilus]	96	93	717
181	4	1362	1598	gi 46606	lacD polypeptide (AA 1-326) [Staphylococcus aureus]	96	80	237
218	1	1	834	gi 1743856	intragenetic coaggregation-relevant adhesin [Streptococcus gordonii]	96	93	834
319	2	115	441	gi 208225	heat-shock protein 82/neomycin phosphotransferase fusion protein (hsp82-neo) [unidentified cloning vector]	96	96	327
54	12	8622	10967	gnl PID100972	pyruvate formate-lyase [Streptococcus mutans]	95	89	2346
181	2	606	1289	gi 149396	lacD [Lactococcus lactis]	95	89	684
46	3	3410	3045	gi 1850606	YlxM [Streptococcus mutans]	94	86	366
89	10	7972	7337	gi 703442	thymidine kinase [Streptococcus gordonii]	94	86	636
148	9	6431	7354	gi 995767	UDP-glucose pyrophosphorylase [Streptococcus pyogenes]	94	85	924
160	7	4430	5848	gi 153573	H+ ATPase [Enterococcus faecalis]	94	87	1419
2	3	4598	3513	gi 153763	plasma receptor [Streptococcus pyogenes]	93	86	1086
12	8	7877	6204	gi 1103865	formyl-tetrahydrofolate synthetase [Streptococcus mutans]	93	84	1674

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
65	11	4734	5120	gi 40150	L14 protein (AA 1-122) [Bacillus subtilis]	93	87	387
68	1	53	1297	gi 47341	antitumor protein [Streptococcus pyogenes]	93	87	1245
80	1	3	299	gnl PID d101166	ribosomal protein S7 [Bacillus subtilis]	93	84	297
127	3	695	1093	gi 142462	ribosomal protein S11 [Bacillus subtilis]	93	86	399
160	5	1924	3462	gi 1773264	ATPase, alpha subunit [Streptococcus mutans]	93	85	1539
211	5	3757	3047	gi 535273	aminopeptidase C [Streptococcus thermophilus]	93	82	711
262	1	16	564	gi 149394	lacB [Lactococcus lactis]	93	90	549
366	1	197	3	gi 295259	cryptophan synthase beta subunit [Synechocystis sp.]	93	91	195
25	3	1392	1976	gi 1574496	hypothetical [Haemophilus influenzae]	92	80	585
36	21	20781	19927	gi 310632	hydrophobic membrane protein [Streptococcus gordonii]	92	86	855
181	3	1265	1534	gi 149396	lacD [Lactococcus lactis]	92	83	270
181	7	3662	4060	gi 149410	enzyme III [Lactococcus lactis]	92	83	399
32	4	5631	3937	gnl PID e294090	fibronectin-binding protein-like protein A [Streptococcus gordonii]	91	85	1695
46	2	3054	1462	gi 1850607	signal recognition particle Ffh [Streptococcus mutans]	91	84	1593
65	10	4442	4726	pir S17865 S178	ribosomal protein S17 - Bacillus stearothermophilus	91	80	285
77	2	260	1900	gi 287871	groEL gene product [Lactococcus lactis]	91	82	1641
84	1	2	2056	gi 871784	Clp-like ATP-dependent protease binding subunit [Bos taurus]	91	79	2055
99	8	10750	9272	gi 153740	sucrose phosphorylase [Streptococcus mutans]	91	84	1479
99	9	11947	11072	gi 153739	membrane protein [Streptococcus mutans]	91	78	876
127	5	2065	2469	pir S07223 R585	ribosomal protein L17 - Bacillus stearothermophilus	91	78	405
132	6	9539	9390	gi 143065	hubst [Bacillus stearothermophilus]	91	89	150
137	8	4765	6153	gnl PID d100347	Na+ -ATPase beta subunit [Enterococcus hirae]	91	79	1369
151	7	11119	9734	gi 1815634	glutamine synthetase type 1 [Streptococcus agalactiae]	91	82	1386
201	2	1798	278	gi 2208998	dextran glucosidase Dxs [Streptococcus suis]	91	79	1521
222	2	673	1839	gi 153741	ATP-binding protein [Streptococcus mutans]	91	85	1167
293	5	4113	4400	gi 1196921	unknown protein [Insertion sequence IS861]	91	71	288
32	7	6166	6570	pir A36933 A369	diacylglycerol kinase homolog - Streptococcus mutans	90	77	405

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
33	2	841	527	gi 1196921	unknown protein [insertion sequence IS861]	90	70	315
48	27	20908	19757	gnl PID e274705	lactate oxidase [Streptococcus iniae]	90	80	1152
55	21	19777	18515	gnl PID e221213	ClpX protein [Bacillus subtilis]	90	75	1263
56	2	717	977	gi 1710133	flagellar filament cap [Borrelia burgdorferi]	90	50	261
65	1	1	606	gi 1165303	L3 [Bacillus subtilis]	90	75	606
114	1	2	988	gi 153562	aspartate beta-semialdehyde dehydrogenase (EC 1.2.1.11) [Streptococcus mutans]	90	80	987
120	1	1345	827	gi 407880	ORF1 [Streptococcus equisimilis]	90	75	519
159	12	7690	8298	gi 143012	GMP synthetase [Bacillus subtilis]	90	84	609
166	4	4076	3282	gi 1661179	high affinity branched chain amino acid transport protein [Streptococcus mutans]	90	78	795
183	1	28	1395	gi 308858	ATP:pyruvate 2-O-phosphotransferase [Lactococcus lactis]	90	76	1368
191	3	2891	1662	gi 149521	tryptophan synthase beta subunit [Lactococcus lactis]	90	78	1230
198	2	1551	436	gi 2323342	[AF014460] CcpA [Streptococcus mutans]	90	76	1116
305	1	37	783	gi 1573551	asparagine synthetase A (asnA) [Haemophilus influenzae]	90	80	747
8	3	2285	3343	gi 149434	putative [Lactococcus lactis]	89	78	1059
46	8	7577	7362	pir A45434 A454	ribosomal protein L19 - Bacillus stearothermophilus	89	76	216
49	9	8363	10342	gi 153792	recP peptide [Streptococcus pneumoniae]	89	83	1980
51	14	18410	19447	gi 308857	ATP:D-fructose 6-phosphate 1-phosphotransferase [Lactococcus lactis]	89	81	1038
57	11	9686	10669	gnl PID d100932	H2O-forming NADH Oxidase [Streptococcus mutans]	89	77	984
65	5	2418	2786	gi 1165307	S19 [Bacillus subtilis]	89	81	369
65	8	3806	4225	sp P14577 RL16_	S05 RIBOSOMAL PROTEIN L16	89	82	420
65	18	8219	8719	gi 143417	ribosomal protein S5 [Bacillus stearothermophilus]	89	76	501
73	9	6337	5315	gi 532204	prs [Listeria monocytogenes]	89	70	1023
76	3	3360	1465	gnl PID e200671	lepA gene product [Bacillus subtilis]	89	76	1896
99	10	12818	11919	gi 153738	membrane protein [Streptococcus mutans]	89	73	900
120	2	3552	1300	gi 407881	stringent response-like protein [Streptococcus equisimilis]	89	79	2253
122	5	4512	2791	gnl PID e280490	unknown [Streptococcus pneumoniae]	89	81	1722

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
176	1	669	4	gi 47394	5-oxopropyl-peptidase [Streptococcus pyogenes]	89	78	666
177	6	3050	3934	gi 912423	putative [Lactococcus lactis]	89	71	885
181	8	4033	5751	gi 149411	enzyme III [Lactococcus lactis]	89	80	1719
211	4	3149	2793	gi 535273	aminopeptidase C [Streptococcus thermophilus]	89	83	357
361	1	431	838	gi 1196922	unknown protein [Insertion sequence IS861]	89	70	408
34	17	11839	10535	sp P30053 SYH_S	HISTIDYL-TRNA SYNTHETASE [EC 6.1.1.21] (HISTIDINE--TRNA LIGASE) (HISRS)	88	78	1305
38	3	1646	2623	gi 2058544	putative ABC transporter subunit ComYA [Streptococcus gordonii]	88	78	978
54	1	3	227	gn PID d101320	YqgU [Bacillus subtilis]	88	66	225
57	2	611	1468	gn PID e134943	putative reductase 1 [Saccharomyces cerevisiae]	88	75	858
65	13	5497	6069	pir A29102 RSBS	ribosomal protein L5 - Bacillus stearothermophilus	88	75	573
65	120	9030	9500	gi 2078381	ribosomal protein L15 [Staphylococcus aureus]	88	83	471
78	3	3636	1108	gn PID d100781	lysyl-aminopeptidase [Lactococcus lactis]	88	80	2529
106	12	12965	12054	gi 2407215	[AF017421] putative heat shock protein HspX [Streptococcus gordonii]	88	72	912
107	2	219	962	gn PID e339862	putative acylneuraminase lyase [Clostridium tertium]	88	75	744
111	8	14073	10420	gi 402363	RNA polymerase beta-subunit [Bacillus subtilis]	88	74	3654
126	9	13096	12062	gn PID e311468	unknown [Bacillus subtilis]	88	74	1035
140	17	19143	18874	gi 1573659	H. influenzae predicted coding region HI0659 [Haemophilus influenzae]	88	61	270
144	1	394	555	gn PID e274705	lactate oxidase [Streptococcus iniae]	88	75	162
148	4	2723	3493	gi 1591672	phosphate transport system ATP-binding protein [Methanococcus jannaschii]	88	68	771
160	8	5853	6278	gi 1773267	ATPase, epsilon subunit [Streptococcus mutans]	88	65	426
177	4	1770	2885	gi 149426	putative [Lactococcus lactis]	88	72	1116
211	6	4140	3613	gi 535273	aminopeptidase C [Streptococcus thermophilus]	88	74	528
231	4	580	957	gi 40186	homologous to E.coli ribosomal protein L27 [Bacillus subtilis]	88	78	378
260	5	2387	2998	gi 1196922	unknown protein [Insertion sequence IS861]	88	69	612
291	6	2017	3375	gn PID d100571	adenylosuccinate synthetase [Bacillus subtilis]	88	75	1359
319	4	658	317	gi 603578	serine/threonine kinase [Phytophthora capsici]	88	88	342
40	5	4353	4514	gi 153672	lactose repressor [Streptococcus mutans]	87	56	162

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
49	10	10660	10929	gi 1196921	unknown protein [Insertion sequence IS861]	87	72	270
65	7	3140	3808	gi 1165309	S3 [Bacillus subtilis]	87	73	669
65	15	6623	7039	gi 1044978	ribosomal protein S8 [Bacillus subtilis]	87	73	417
75	8	5411	6625	gi 1877422	galactokinase [Streptococcus mutans]	87	78	1215
80	2	703	2805	gnl PID d101166	elongation factor G [Bacillus subtilis]	87	76	2103
82	1	541	248	gi 1196921	unknown protein [Insertion sequence IS861]	87	69	294
140	23	25033	23897	gnl PID e254999	phenylalanyl-tRNA synthetase beta subunit [Bacillus subtilis]	87	74	1137
214	14	10441	8516	gi 2281305	glucose inhibited division protein homolog Gida [Lactococcus lactis cremoris]	87	75	1926
220	2	2742	874	gnl PID e324358	product highly similar to elongation factor EF-G [Bacillus subtilis]	87	73	1869
260	4	2096	2389	gi 1196921	unknown protein [Insertion sequence IS861]	87	72	294
323	1	27	650	gi 897795	30S ribosomal protein [Pedococcus acidilactici]	87	73	624
357	1	154	570	gi 1044978	ribosomal protein S8 [Bacillus subtilis]	87	73	417
49	11	10927	11445	gi 1196922	unknown protein [Insertion sequence IS861]	86	63	519
59	12	7461	9224	gi 951051	relaxase [Streptococcus pneumoniae]	86	68	1764
65	4	1553	2401	pir A02759 R5BS	ribosomal protein L2 - Bacillus stearothermophilus	86	77	849
65	23	10957	11610	gi 44074	adenylate kinase [Lactococcus lactis]	86	76	654
82	4	4374	4856	gi 153745	mannitol-specific enzyme III [Streptococcus mutans]	86	72	483
102	4	4270	4986	gnl PID e264705	OMP decarboxylase [Lactococcus lactis]	86	76	717
106	6	7824	6880	gnl PID e137598	aspartate transcarbamylase [Lactobacillus leichmannii]	86	68	945
107	1	1	273	gnl PID e339862	putative acylneuraminate lyase [Clostridium tertium]	86	71	273
111	7	10432	6710	gnl PID e228283	DNA-dependent RNA polymerase [Streptococcus pyogenes]	86	80	3723
131	9	5704	4892	gi 1661193	poliprotein diacylglycerol transferase [Streptococcus mutans]	86	71	813
134	7	6430	7980	gi 2388637	glycerol kinase [Enterococcus faecalis]	86	73	1551
146	11	7473	6583	gi 1591731	melvalonate kinase [Methanococcus jannaschii]	86	72	891
153	2	595	2010	gi 2160707	dipeptidase [Lactococcus lactis]	86	78	1416
154	1	2	1435	gi 1857246	6-phosphogluconate dehydrogenase [Lactococcus lactis]	86	74	1434

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
161	5	5025	6284	gi 47529	Unknown [Streptococcus salivarius]	86	66	1260
184	1	2	1483	gi 642667	NADP-dependent glyceraldehyde-3-phosphate dehydrogenase [Streptococcus mutans]	86	73	1482
210	8	3659	6571	gi 153661	translational initiation factor IF2 [Enterococcus faecium]	86	76	2913
250	1	2	187	gi 1573551	asparagine synthetase A (asnA) [Haemophilus influenzae]	86	68	186
36	4	2644	3909	gi 2149909	cell division protein [Enterococcus faecalis]	85	73	1266
38	4	2475	3587	gi 2058545	putative ABC transporter subunit ComYB [Streptococcus gordonii]	85	72	1113
38	5	3577	3915	gi 2058546	ComYC [Streptococcus gordonii]	85	80	339
57	5	2797	3789	gnl pid d101316	yqfJ [Bacillus subtilis]	85	72	993
82	5	4915	6054	gi 153746	mannitol-phosphate dehydrogenase [Streptococcus mutans]	85	68	1140
83	15	14690	15793	gi 143371	phosphoribosyl aminimidazole synthetase (PUR-M) [Bacillus subtilis]	85	69	1104
87	2	1417	2388	gi 1184967	ScrR [Streptococcus mutans]	85	69	972
108	3	2666	3154	gi 153566	ORF (19K protein) [Enterococcus faecalis]	85	67	489
127	2	312	692	gi 1044989	ribosomal protein S13 [Bacillus subtilis]	85	72	381
128	3	1534	2409	gi 1685110	tetrahydrofolate dehydrogenase/cyclohydrolase [Streptococcus thermophilus]	85	71	876
137	7	2962	4767	gnl pid d100347	Na+ -ATPase alpha subunit [Enterococcus hirae]	85	74	1806
170	2	2622	709	gnl pid d102006	(AB001488) FUNCTION UNKNOWN, SIMILAR PRODUCT IN E.COLI, H. INFLUENZAE AND NEISSERIA MENINGITIDIS. [Bacillus subtilis]	85	70	1914
187	5	3760	4386	gi 727436	putative 20-kDa protein [Lactococcus lactis]	85	65	627
233	2	728	1873	gi 1163116	ORF-5 [Streptococcus pneumoniae]	85	67	1146
234	3	962	1255	gi 2293155	(AF008220) YtiA [Bacillus subtilis]	85	61	294
240	1	309	1931	gi 143597	CTP synthetase [Bacillus subtilis]	85	70	1623
6	1	199	1521	gi 508979	CTP-binding protein [Bacillus subtilis]	84	72	1323
10	4	4375	3443	gnl pid e339862	putative acylneuraminate lyase [Clostridium tertium]	84	70	933
14	1	63	2093	gi 520753	DNA topoisomerase I [Bacillus subtilis]	84	69	2031
19	4	1793	2593	gi 2352484	(AF005098) RNaseH II [Lactococcus lactis]	84	68	801
20	17	17720	19687	gnl pid d100584	cell division protein [Bacillus subtilis]	84	71	1968
22	28	21723	20884	gi 299163	alanine dehydrogenase [Bacillus subtilis]	84	68	840

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
30	10	7730	6792	gnl PID d100296	[fructokinase (Streptococcus mutans)]	84	75	939
33	9	5650	5300	gi 147194	[phnA protein (Escherichia coli)]	84	71	351
36	22	21551	20772	gi 310631	[ATP binding protein (Streptococcus gordonii)]	84	72	780
48	4	2837	2505	gi 882609	[6-phospho-beta-glucosidase (Escherichia coli)]	84	69	333
58	1	41	1516	gi 450849	[amylase (Streptococcus bovis)]	84	73	1476
59	10	6715	7116	gi 951053	[ORF10, putative (Streptococcus pneumoniae)]	84	74	402
62	1	21	644	gi 806487	[ORF211; putative (Lactococcus lactis)]	84	66	624
65	17	7779	8207	gi 1044980	[ribosomal protein L18 (Bacillus subtilis)]	84	73	429
65	21	9507	10397	gi 44073	[SecY protein (Lactococcus lactis)]	84	68	891
106	4	5474	2262	gnl PID e199387	[carbamoyl-phosphate synthase (Lactobacillus plantarum)]	84	73	3213
159	1	147	4	gi 806487	[ORF211; putative (Lactococcus lactis)]	84	63	144
163	4	4690	5910	gi 2293164	[AF008220] SAM synthase (Bacillus subtilis)]	84	69	1221
192	1	46	1308	gi 495046	[tripeptidase (Lactococcus lactis)]	84	73	1263
348	1	671	6	gi 1787753	[AE000245] f346; 79 pct identical to 336 amino acids of ADH1 ZYMHO SW: P20368 but has 10 additional N-ter residues (Escherichia coli)]	84	71	666
3	4	1572	3575	gi 143766	[thrSv] (EC 6.1.1.3) (Bacillus subtilis)]	83	65	2004
9	6	3893	3417	gnl PID d100576	[single strand DNA binding protein (Bacillus subtilis)]	83	68	477
17	15	7426	8457	gi 520738	[comA protein (Streptococcus pneumoniae)]	83	66	1032
20	12	13860	14144	gnl PID d100583	[unknown (Bacillus subtilis)]	83	61	285
23	4	3358	2606	gi 1788294	[AE000290] o238; This 238 aa orf is 40 pct identical (5 gaps) to 231 residues of an approx. 248 aa protein YEB_CECOLI SW: P24237 (Escherichia coli)]	83	74	753
28	6	3304	3005	gi 1573659	[H. influenzae predicted coding region H10659 (Haemophilus influenzae)]	83	57	300
35	7	5108	3867	gi 311707	[hypothetical nucleotide binding protein (Acholeplasma laidlawii)]	83	63	1242
55	19	17932	17528	gi 537085	[ORF_f141 (Escherichia coli)]	83	59	405
55	20	18539	17919	gi 496558	[orfX (Bacillus subtilis)]	83	69	621
65	6	2795	3142	gi 1165308	[L22 (Bacillus subtilis)]	83	64	348
68	6	6877	6683	gi 1213494	[immunoglobulin A1 protease (Streptococcus pneumoniae)]	83	54	195

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
87	15	15112	14771	gnl PID e323522	putative rpoZ protein [Bacillus subtilis]	83	54	342
96	12	8963	9631	gi 47394	5-oxopropyl-peptidase [Streptococcus pyogenes]	83	73	669
98	1	3	263	gi 1183885	glutamine-binding subunit [Bacillus subtilis]	83	55	261
120	4	7170	5233	gi 310630	zinc metalloprotease [Streptococcus gordonii]	83	72	1938
127	7	2998	4347	gi 1500567	M. jannaschii predicted coding region MJ1665 [Methanococcus jannaschii]	83	72	1350
137	1	3	440	gi 472918	v-type Na-ATPase [Enterococcus hirae]	83	60	438
160	6	3466	4356	gi 1773265	ATPase, gamma subunit [Streptococcus mutans]	83	67	891
214	4	2278	2964	gi 1663279	transposase [Streptococcus pneumoniae]	83	72	687
226	3	2367	2020	gi 142154	thioredoxin [Synecococcus FCC6301]	83	58	348
303	1	3	1049	gi 40046	phosphoglucose isomerase A (AA 1-449) [Bacillus stearothermophilus]	83	67	1047
303	2	1155	1931	gi 289282	glutamyl-tRNA synthetase [Bacillus subtilis]	83	67	777
6	17	15370	14318	gi 633147	ribose-phosphate pyrophosphokinase [Bacillus caldolyticus]	82	64	1053
7	1	299	96	gi 143648	ribosomal protein L28 [Bacillus subtilis]	82	69	204
9	3	1479	1090	gi 385178	unknown [Bacillus subtilis]	82	46	390
9	7	4213	3899	gnl PID d100576	ribosomal protein S6 [Bacillus subtilis]	82	60	315
12	6	4688	3942	gnl PID d100571	unknown [Bacillus subtilis]	82	68	747
22	17	13422	14837	gi 520754	putative [Bacillus subtilis]	82	69	1416
22	18	14897	15658	gnl PID d101929	uridine monophosphate kinase [Synecocystis sp.]	82	62	762
33	16	11471	10641	gnl PID d101190	ORF4 [Streptococcus mutans]	82	68	831
35	9	7400	6255	gi 1881543	UDP-N-acetylglucosamine-2-epimerase [Streptococcus pneumoniae]	82	68	1146
40	10	8003	7533	gi 1173519	riboflavin synthase beta subunit [Actinobacillus pleuropneumoniae]	82	68	471
48	32	23159	23437	gi 1930092	outer membrane protein [Campylobacter jejuni]	82	61	279
52	14	13833	14765	gi 142521	deoxyribodipyrimidine photolyase [Bacillus subtilis]	82	61	933
60	4	4737	1849	gnl PID d102221	(AB001610) uvrA [Deinococcus radiodurans]	82	66	2889
62	4	2131	1457	gi 2246749	(AF009622) thioredoxin reductase [Listeria monocytogenes]	82	63	675
71	11	16586	17518	gnl PID e322063	ss-1,4-galactosyltransferase [Streptococcus pneumoniae]	82	60	933
73	13	9222	7837	gnl PID d100586	unknown [Bacillus subtilis]	82	65	1386

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
74	1	1	3771	gnl PID d101199	alkaline amylopullulanase [Bacillus sp.]	82	68	3771
83	9	3696	3983	gnl PID e305362	unnamed protein product [Streptococcus thermophilus]	82	52	288
86	11	10776	9394	gi 683583	5-enolpyruvylshikimate-3-phosphate synthase [Lactococcus lactis]	82	67	1383
89	12	8295	9752	gii 40025	homologous to E.coli 50K [Bacillus subtilis]	82	66	1458
115	9	10347	8812	gnl PID d102090	(AB003927) phospho-beta-galactosidase 1 [Lactobacillus gasserii]	82	74	1536
118	1	1	1332	gnl PID d100579	seryl-tRNA synthetase [Bacillus subtilis]	82	71	1332
151	3	4657	6246	pir S06097 S060	type I site-specific deoxyribonuclease (EC 3.1.21.3) CfrA chain S - Citrobacter freundii	82	66	1590
173	6	4183	3503	gi 2313836	(AE000584) conserved hypothetical protein [Helicobacter pylori]	82	68	681
177	12	5481	7442	gnl PID d101999	(AB001341) NcrB [Escherichia coli]	82	58	1962
193	2	178	576	pir S08564 R385	ribosomal protein S9 - Bacillus stearothermophilus	82	70	399
245	2	258	845	gi 146402	EcoA type I restriction-modification enzyme S subunit [Escherichia coli]	82	68	588
9	5	3400	3146	gnl PID d100576	ribosomal protein S18 [Bacillus subtilis]	81	66	255
16	7	7484	8413	gi 1100074	cryptophanyl-tRNA synthetase [Clostridium longisporum]	81	70	930
20	11	10308	13820	gnl PID d100583	transcription-repair coupling factor [Bacillus subtilis]	81	63	3513
38	2	1232	1606	gi 2058543	putative DNA binding protein [Streptococcus gordonii]	81	63	375
45	2	3061	1751	gi 460259	enolase [Bacillus subtilis]	81	67	1311
46	1	2	1267	gi 431231	uracil permease [Bacillus caldolyticus]	81	61	1266
48	3	2453	1440	gnl PID d100453	mannosephosphate isomerase [Streptococcus mutans]	81	70	1014
54	2	1106	336	gi 154752	transport protein [Agrobacterium tumefaciens]	81	64	771
65	22	10306	10821	gi 44073	SecY protein [Lactococcus lactis]	81	66	516
89	4	3874	2603	gi 556886	serine hydroxymethyltransferase [Bacillus subtilis]	81	69	1272
99	16	19126	18929	gi 2313526	(AE000557) H. pylori predicted coding region HP0411 [Helicobacter pylori]	81	75	198
106	7	8373	7822	gnl PID e19384	pyrR [Lactobacillus plantarum]	81	61	552
108	6	5054	6877	gi 1469939	group B oligopeptidase PepB [Streptococcus agalactiae]	81	66	1824
113	15	15899	18283	plr S09411 S094	spoIIIE protein - Bacillus subtilis	81	65	2385
128	5	3359	3634	gi 1685111	orf1091 [Streptococcus thermophilus]	81	69	276

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
151	1	830	3211	gi 304896	EcoE type I restriction-modification enzyme R subunit [Escherichia coli]	81	59	2382
159	11	6722	7837	gi 2239288	GMP synthetase [Bacillus subtilis]	81	69	1116
170	1	739	458	gnl PID d102006	[AB001488] FUNCTION UNKNOWN. [Bacillus subtilis]	81	55	282
191	2	1759	893	gi 149522	tryptophan synthase alpha subunit [Lactococcus lactis]	81	65	867
214	3	2290	1994	gi 157587	reverse transcriptase endonuclease [Drosophila virilis]	81	43	297
217	4	4415	4008	gi 466473	cellobiose phosphotransferase enzyme II' [Bacillus stearothermophilus]	81	59	408
262	2	569	868	gi 153675	tagatase 6-P kinase [Streptococcus mutans]	81	68	300
299	1	663	4	gnl PID e301154	StySKI methylase [Salmonella enterica]	81	60	660
366	2	376	83	gi 149521	tryptophan synthase beta subunit [Lactococcus lactis]	81	65	294
12	10	8766	9242	gi 1216490	DNA/pantothenate metabolism flavoprotein [Streptococcus mutans]	80	64	477
17	11	6050	5748	gnl PID e305362	unnamed protein product [Streptococcus thermophilus]	80	67	303
17	16	8455	9066	gi 703126	leucocin A translocator [Leuconostoc gelidium]	80	59	612
18	3	2440	1613	gi 1591672	phosphate transport system ATP-binding protein [Methanococcus jannaschii]	80	58	828
27	3	4248	1579	gi 452309	valyl-L-tyrosine synthetase [Bacillus subtilis]	80	69	2670
28	7	3671	3288	gi 1573660	H. influenzae predicted coding region H10660 [Haemophilus influenzae]	80	63	384
32	2	902	1933	gnl PID e264499	dihydroorotate dehydrogenase B [Lactococcus lactis]	80	66	1032
39	1	1	1266	gnl PID e234078	hom [Lactococcus lactis]	80	63	1266
52	5	4363	3593	gi 1183884	ATP-binding subunit [Bacillus subtilis]	80	57	771
54	5	4550	4744	gi 2198820	[AF004225] Cux/CDP homeoprotein [Mus musculus]	80	60	195
59	11	7109	7486	gi 951052	ORF9, putative [Streptococcus pneumoniae]	80	68	378
65	3	1230	1550	pir A02815 R58S	ribosomal protein L23 - Bacillus stearothermophilus	80	69	321
65	12	5174	5503	pir A02819 R58S	ribosomal protein L24 - Bacillus stearothermophilus	80	70	330
66	9	9884	10687	gi 2313836	[AE000584] conserved hypothetical protein [Helicobacter pylori]	80	66	804
82	2	648	2438	gi 622991	mannitol transport protein [Bacillus stearothermophilus]	80	65	1791
85	1	950	630	gi 528995	polyketide synthase [Bacillus subtilis]	80	46	321
89	8	6870	5779	gi 853776	peptide chain release factor 1 [Bacillus subtilis]	80	63	1092
93	12	8718	7438	gnl PID d101959	hypothetical protein [Synechocystis sp.]	80	60	1281

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
106	5	6854	5751	gnl PID e199386	glutaminase of carbamoyl-phosphate synthase [Lactobacillus plantarum]	80	65	1104
109	2	2160	1450	gi 40056	phoP gene product [Bacillus subtilis]	80	59	711
124	9	4246	3953	gnl PID d102254	30S ribosomal protein S16 [Bacillus subtilis]	80	65	294
128	8	5148	6428	gi 2281308	phosphopentomutase [Lactococcus lactis cremoris]	80	66	1281
137	19	12665	11376	gi 159109	NADP-dependent glutamate dehydrogenase (Giardia intestinalis)	80	68	1290
140	19	19699	19457	gi 517210	putative transposase [Streptococcus pyogenes]	80	70	243
158	2	2474	984	gi 1877423	galactose-1-P-uridylyl transferase [Streptococcus mutans]	80	65	1491
171	10	7474	7728	gi 397800	cyclophilin C-associated protein [Mus musculus]	80	60	255
181	1	2	619	gi 149395	lacC [Lactococcus lactis]	80	66	618
313	1	27	539	gi 143467	ribosomal protein S4 [Bacillus subtilis]	80	70	513
329	2	1652	858	gi 533080	RecF protein [Streptococcus pyogenes]	80	63	795
371	1	2	958	gi 442360	ClpC adenosine triphosphatase [Bacillus subtilis]	80	58	957
8	7	4312	5580	gi 149435	putative [Lactococcus lactis]	79	64	1269
23	1	1175	135	gi 1542975	AbcB [Thermoanaerobacterium thermosulfurigenes]	79	61	1041
33	14	9244	8201	gnl PID e253891	UDP-glucose 4-epimerase [Bacillus subtilis]	79	62	1044
36	3	1242	2633	gnl PID e324218	ftsA [Enterococcus hirae]	79	58	1392
38	13	7155	8378	gi 405134	acetate kinase [Bacillus subtilis]	79	58	1224
55	7	9011	8229	gi 1146234	dihydrodipicolinate reductase [Bacillus subtilis]	79	56	783
65	19	8661	8915	gi 2078380	ribosomal protein L30 [Staphylococcus aureus]	79	68	255
69	4	3678	2128	gnl PID e311452	unknown [Bacillus subtilis]	79	64	1551
69	9	7881	7279	gi 677850	hypothetical protein [Staphylococcus aureus]	79	59	603
72	10	8491	9783	gnl PID d101091	hypothetical protein [Synecocystis sp.]	79	62	1293
80	3	2906	7300	gi 143342	polymerase III [Bacillus subtilis]	79	65	4395
82	14	13326	15689	gnl PID e255093	hypothetical protein [Bacillus subtilis]	79	65	2364
86	13	12233	11118	gi 683582	prephenate dehydrogenase [Lactococcus lactis]	79	58	1116
92	3	940	1734	gi 537286	triosephosphate isomerase [Lactococcus lactis]	79	65	795
98	6	4023	4742	gnl PID d100262	LiveG protein [Salmonella typhimurium]	79	63	720

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
99	12	16315	14150	gi 153736	a-galactosidase [Streptococcus mutans]	79	64	2166
107	7	5684	6406	gi 460080	D-alanine:D-alanine ligase-related protein [Enterococcus faecalis]	79	58	723
113	9	6858	8303	gi 466882	pps1; B1496_C2_189 [Mycobacterium leprae]	79	64	1446
151	10	13424	12213	gi 450686	3-phosphoglycerate kinase [Thermotoga maritima]	79	60	1212
162	2	1158	3017	gi 506700	CapD [Staphylococcus aureus]	79	67	1860
177	5	2876	3052	gi 912423	putative [Lactococcus lactis]	79	61	177
177	8	4198	4563	gi 149429	putative [Lactococcus lactis]	79	61	366
187	3	2728	2907	gnl PID d102002	[AB001488] FUNCTION UNKNOWN. [Bacillus subtilis]	79	53	180
189	7	3589	4350	gnl PID e183449	putative ATP-binding protein of ABC-type [Bacillus subtilis]	79	61	762
191	5	4249	3449	gi 149519	indoleglycerol phosphate synthase [Lactococcus lactis]	79	66	801
211	3	1805	2737	gi 147404	mannose permease subunit II-M-Man [Escherichia coli]	79	57	933
212	3	3863	3621	gnl PID e209004	glutaredoxin-like protein [Lactococcus lactis]	79	58	243
215	1	987	715	gi 2293242	[AF008220] arginine succinate synthase [Bacillus subtilis]	79	64	273
323	2	530	781	gi 897795	30S ribosomal protein [Pedococcus acidilactici]	79	67	252
380	1	694	2	gi 1184680	polynucleotide phosphorylase [Bacillus subtilis]	79	64	693
384	2	655	239	gi 143328	phoP protein (put.); putative [Bacillus subtilis]	79	59	417
6	3	2820	4091	gi 853767	UDP-N-acetylglucosamine 1-carboxyvinyltransferase [Bacillus subtilis]	78	62	1272
8	1	50	1786	gi 149432	putative [Lactococcus lactis]	78	63	1737
9	1	351	124	gi 897793	y98 gene product [Pedococcus acidilactici]	78	59	228
15	8	7364	8314	gnl PID d100585	cysteine synthetase A [Bacillus subtilis]	78	63	951
20	10	9738	10310	gnl PID d100583	stage V sporulation [Bacillus subtilis]	78	58	573
20	16	17165	17713	gi 49105	hypoxanthine phosphoribosyltransferase [Lactococcus lactis]	78	59	549
22	22	17388	18416	gnl PID d101315	yqfE [Bacillus subtilis]	78	60	1029
22	27	20971	20612	gi 299163	alanine dehydrogenase [Bacillus subtilis]	78	59	360
34	8	7407	7105	gi 41015	aspartate-tRNA ligase [Escherichia coli]	78	55	303
35	8	6257	5196	gi 1657644	Cap8E [Staphylococcus aureus]	78	60	1062

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
40	11	9287	8001	gi 1173518	GTP cyclohydrolase II/ 3,4-dihydroxy-2-butanone-4-phosphate synthase [Actinobacillus pleuropneumoniae]	78	58	1287
48	31	22422	23183	gi 2314330	(AE000623) glutamine ABC transporter, ATP-binding protein (glnQ) [Helicobacter pylori]	78	58	762
52	2	2101	1430	gi 1183887	integral membrane protein [Bacillus subtilis]	78	54	672
55	14	13605	12712	gnl PID d102026	(AB002150) YbbP [Bacillus subtilis]	78	58	894
55	17	16637	15612	gnl PID e313027	hypothetical protein [Bacillus subtilis]	78	51	1026
71	14	19756	19598	gi 1179764	calcium channel alpha-1D subunit (Homo sapiens)	78	57	159
74	11	15031	14018	gi 1573279	Holliday junction DNA helicase (ruvB) [Haemophilus influenzae]	78	57	1014
75	9	6623	7972	gi 1877423	galactose-1-P-uridylyl transferase [Streptococcus mutans]	78	62	1350
81	12	12125	13906	gi 1573607	L-fucose isomerase (fucI) [Haemophilus influenzae]	78	66	1782
82	3	2423	4417	gi 153744	ORF X; putative [Streptococcus mutans]	78	64	1995
83	18	16926	18500	gi 143373	phosphoribosyl aminoimidazole carboxy formyl formyltransferase/inosine monophosphate cyclohydrolase (PUR-H(J)) [Bacillus subtilis]	78	63	1575
83	20	20212	20775	gi 143364	phosphoribosyl aminoimidazole carboxylase I (PUR-E) [Bacillus subtilis]	78	64	564
92	2	165	878	gnl PID d101190	ORF2 [Streptococcus mutans]	78	62	714
98	8	5863	6909	gi 2331287	(AF013188) release factor 2 [Bacillus subtilis]	78	63	1047
113	3	1071	2741	gi 580914	dnazX [Bacillus subtilis]	78	64	1671
127	4	1133	2071	gi 142463	RNA polymerase alpha-core-subunit [Bacillus subtilis]	78	59	939
132	1	2782	497	gi 1561763	pullulanase [Bacteroides thetaotaomicron]	78	58	2286
135	4	2698	3337	gi 1788036	(AE000269) NH3-dependent NAD synthetase (Escherichia coli)	78	66	840
140	24	26853	25423	gi 1100077	phospho-beta-glucosidase [Clostridium longisporum]	78	64	1431
150	5	4690	4514	gi 149464	amino peptidase [Lactococcus lactis]	78	42	177
152	1	1	795	gi 639915	NADH dehydrogenase subunit [Thunbergia alata]	78	43	795
162	4	4997	4110	gnl PID e323528	putative YhaP protein [Bacillus subtilis]	78	64	888
181	10	8651	7947	gi 149402	lactose repressor (lacR; alt.) [Lactococcus lactis]	78	48	705
200	4	3627	4958	gnl PID d100172	invertase [Zymomonas mobilis]	78	61	1332
203	3	3230	3015	gi 1174237	CycK [Pseudomonas fluorescens]	78	57	216

TABLE 2
S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
210	9	6789	7172	gi 580902	ORF6 gene product [Bacillus subtilis]	78	42	384
214	6	3810	2797	gnl PID d102049	P. haemolytica o-sialoglycoprotein endopeptidase: P36175 (660) transmembrane [Bacillus subtilis]	78	60	1014
214	13	6322	8163	gi 1377831	unknown [Bacillus subtilis]	78	62	1842
217	1	9	2717	gi 488430	alcohol dehydrogenase 2 [Entamoeba histolytica]	78	64	2709
222	3	2316	3098	gi 1573047	spore germination and vegetative growth protein (gerC2) [Haemophilus influenzae]	78	65	783
268	1	742	8	gi 517210	putative transposase [Streptococcus pyogenes]	78	65	735
276	1	223	753	gnl PID d100306	ribosomal protein L1 [Bacillus subtilis]	78	65	531
312	3	1567	1079	gi 289261	comE ORF2 [Bacillus subtilis]	78	54	489
339	1	117	794	gi 1916729	CadD [Staphylococcus aureus]	78	53	678
342	2	762	265	gi 1842439	phosphatidylglycerophosphate synthase [Bacillus subtilis]	78	59	498
383	1	737	3	gi 1184680	polynucleotide phosphorylase [Bacillus subtilis]	78	64	735
7	15	11923	11018	gi 1399855	carboxyltransferase beta subunit [Synechococcus PCC7942]	77	63	906
8	2	1698	2255	gi 149433	putative [Lactococcus lactis]	77	59	558
17	14	6948	7550	gi 520738	comA protein [Streptococcus pneumoniae]	77	60	603
30	12	9761	8967	gi 1000451	Trep [Bacillus subtilis]	77	43	795
36	14	11421	12131	gi 1573766	phosphoglyceromutase (gpmA) [Haemophilus influenzae]	77	64	711
55	3	3836	4056	gi 1708640	YeaB [Bacillus subtilis]	77	55	261
61	8	8377	8054	gi 1890649	multidrug resistance protein LmrA [Lactococcus lactis]	77	51	324
65	2	607	1254	gi 40103	ribosomal protein L4 [Bacillus stearothermophilus]	77	63	648
68	8	7509	7240	gi 47551	MRP [Streptococcus suis]	77	68	270
69	1	1083	118	gnl PID e311493	unknown [Bacillus subtilis]	77	57	966
77	5	4583	4026	gnl PID e281578	hypothetical 12.2 kd protein [Bacillus subtilis]	77	60	558
83	14	13104	14552	gi 1590947	amidophosphoribosyltransferase [Methanococcus jannaschii]	77	56	1449
94	4	3006	5444	gnl PID e329895	(AJ000496) cyclic nucleotide-gated channel beta subunit [Rattus norvegicus]	77	66	2439
96	11	8518	8880	gi 551879	ORF 1 [Lactococcus lactis]	77	62	363
99	11	14082	12799	gi 153737	sugar-binding protein [Streptococcus mutans]	77	61	1284

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
106	2	361	1176	gi 148921	licD protein [Haemophilus influenzae]	77	51	816
108	4	3152	4030	gi 1574730	cellurite resistance protein (tehB) [Haemophilus influenzae]	77	58	879
118	4	3520	3131	gi 1573900	D-alanine permease (dagA) [Haemophilus influenzae]	77	57	390
124	4	1796	1071	gi 1573162	tRNA (guanine-N1)-methyltransferase (trmD) [Haemophilus influenzae]	77	58	726
126	4	5909	4614	gnl PID d101163	Srb [Bacillus subtilis]	77	62	1296
128	2	630	1373	gnl PID d101328	YqjZ [Bacillus subtilis]	77	58	744
130	1	1	1287	gnl PID e325013	hypothetical protein [Bacillus subtilis]	77	61	1287
139	5	4388	3639	gi 2293302	(AF008220) YtqA [Bacillus subtilis]	77	59	750
140	11	10931	9582	gi 289284	cysteinyI-tRNA synthetase [Bacillus subtilis]	77	64	1350
140	18	19451	19263	gi 517210	putative transposase [Streptococcus pyogenes]	77	66	189
141	2	976	1683	gnl PID e157887	URF5 (aa 1-573) [Drosophila yakuba]	77	50	708
141	4	2735	5293	gi 556258	secA [Listeria monocytogenes]	77	59	2559
144	2	671	2173	gnl PID d100585	lysyl-tRNA thynthetase [Bacillus subtilis]	77	61	1503
163	5	6412	7398	gi 511015	dihydroorotate dehydrogenase A [Lactococcus lactis]	77	62	987
164	10	7841	7074	gnl PID d100964	homologue of iron dicitrate transport ATP-binding protein FecE of E. coli [Bacillus subtilis]	77	52	768
191	8	7257	5791	gi 149516	anthranilate synthase alpha subunit [Lactococcus lactis]	77	57	1467
198	8	5377	5177	gi 1573856	hypothetical [Haemophilus influenzae]	77	66	201
213	1	202	462	gi 1743860	Bca2 [Mus musculus]	77	50	261
250	2	231	509	gnl PID e334776	YibH' protein [Bacillus subtilis]	77	60	279
289	3	1737	1276	gnl PID d100947	Ribosomal Protein L10 [Bacillus subtilis]	77	62	462
292	2	1399	668	gi 143004	transfer RNA-Gln synthetase [Bacillus stearothermophilus]	77	58	732
7	3	2734	1166	gnl PID d101824	peptide-chain-release factor 3 [Synecocystis sp.]	76	53	1569
7	23	18474	18235	gi 455157	acyl carrier protein [Cryptomonas phi]	76	57	240
9	8	5706	4342	gi 1146247	asparaginyl-tRNA synthetase [Bacillus subtilis]	76	61	1365
10	5	4531	4385	gnl PID e314495	hypothetical protein [Clostridium perfringens]	76	53	147
18	2	1615	842	gi 1591672	phosphate transport system ATP-binding protein [Methanococcus jannaschii]	76	56	774

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
22	37	27796	28173	gnl PID e13389	translation initiation factor IF3 (AA 1-172) [Bacillus stearothermophilus]	76	64	378
35	6	3869	2682	gi 1773346	Cap5G [Staphylococcus aureus]	76	61	1188
48	28	21113	21787	gi 2314328	[AE000623] glutamine ABC transporter, permease protein (glnP) [Helicobacter pylori]	76	52	675
52	12	12881	13786	gi 142521	deoxyribodipyrimidine photolyase [Bacillus subtilis]	76	58	906
55	10	11521	10571	gnl PID e283110	femD [Staphylococcus aureus]	76	61	951
57	8	7824	6559	gi 290561	ol188 [Escherichia coli]	76	47	1266
62	5	2406	2095	gnl PID e313024	hypothetical protein [Bacillus subtilis]	76	59	312
65	9	4223	4441	gi 40148	L29 protein (AA 1-66) [Bacillus subtilis]	76	58	219
68	2	1328	2371	gnl PID e284233	anabolic ornithine carbamoyltransferase [Lactobacillus plantarum]	76	61	1044
69	8	7297	6005	gnl PID d101420	Pyrimidine nucleoside phosphorylase [Bacillus stearothermophilus]	76	61	1293
73	12	7839	7267	gnl PID e243629	unknown [Mycobacterium tuberculosis]	76	53	573
74	5	8433	7039	gnl PID d102048	C. thermocellum beta-glucosidase; P26208 (985) [Bacillus subtilis]	76	60	1395
80	5	7643	7936	gi 2314030	[AE000599] conserved hypothetical protein [Helicobacter pylori]	76	61	294
82	15	16019	16996	gi 1573900	D-alanine permease (dagA) [Haemophilus influenzae]	76	56	978
83	19	18616	19884	gi 1433374	phosphoribosyl glycine synthetase (PUR-D; gta start codon) [Bacillus subtilis]	76	60	1269
86	14	13409	12231	gi 143806	AroF [Bacillus subtilis]	76	58	1179
87	1	3	1442	gi 153804	sucrose-6-phosphate hydrolase [Streptococcus mutans]	76	59	1440
87	16	15754	15110	gnl PID e323500	putative Gmk protein [Bacillus subtilis]	76	56	645
93	4	1769	1539	gi 1574820	1,4-alpha-glucan branching enzyme (glgB) [Haemophilus influenzae]	76	46	231
94	1	51	365	gi 144313	6.0 kd ORF [Plasmid ColEI]	76	73	315
116	2	2151	1678	gi 153841	pneumococcal surface protein A [Streptococcus pneumoniae]	76	59	474
123	6	3442	5895	gi 1314297	ClpC ATPase [Listeria monocytogenes]	76	59	2454
126	2	2156	2932	gnl PID d101328	YgiZ [Bacillus subtilis]	76	61	777
128	10	6973	7797	gi 944944	purine nucleoside phosphorylase [Bacillus subtilis]	76	60	825
131	11	6186	5812	gi 1674310	[AE000058] Mycoplasma pneumoniae, MG085 homolog, from M. genitalium [Mycoplasma pneumoniae]	76	47	375

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
139	4	3641	3192	gi 2293302	(AF008220) Ytqa [Bacillus subtilis]	76	53	450
140	14	14872	12536	gi 1184680	polynucleotide phosphorylase [Bacillus subtilis]	76	62	2337
143	2	2583	3905	gi 143795	transfer RNA-Tyr synthetase [Bacillus subtilis]	76	61	1323
170	6	5095	6114	gnl PID d100959	ycgQ [Bacillus subtilis]	76	44	1020
180	2	1927	557	gi 40019	ORF 821 (aa 1-821) [Bacillus subtilis]	76	53	1371
191	7	5815	5228	gi 551880	anthranilate synthase beta subunit [Lactococcus lactis]	76	61	588
195	3	3829	2444	gi 2149905	D-glutamic acid adding enzyme [Enterococcus faecalis]	76	60	1386
200	3	1914	3629	gi 431272	lysis protein [Bacillus subtilis]	76	58	1716
201	1	431	207	gi 2208998	dextran glucosidase DexS [Streptococcus suis]	76	57	225
214	2	1283	2380	gi 663278	transposase [Streptococcus pneumoniae]	76	55	1098
225	3	2338	3411	gi 1552775	ATP-binding protein [Escherichia coli]	76	56	1074
233	1	2	724	gi 1163115	neuraminidase B [Streptococcus pneumoniae]	76	60	723
347	1	523	38	gi 537033	ORF_356 [Escherichia coli]	76	60	486
356	2	842	165	gi 2149905	D-glutamic acid adding enzyme [Enterococcus faecalis]	76	61	678
366	3	734	348	gi 149320	[phosphoribosyl anthranilate isomerase [Lactococcus lactis]	76	69	387
5	8	12599	11484	gi 1574293	fimbrial transcription regulation repressor (pilB) [Haemophilus influenzae]	75	61	1116
6	13	12553	11894	gnl PID d102050	lydH [Bacillus subtilis]	75	51	660
9	10	7282	6062	gi 142538	aspartate aminotransferase [Bacillus sp.]	75	55	1221
10	12	8080	7940	gi 149493	SCRPI methylase [Lactococcus lactis]	75	56	141
18	5	4266	3301	gnl PID d101319	YqgH [Bacillus subtilis]	75	52	966
22	4	1838	2728	gi 1373157	orf-X; hypothetical protein; Method: conceptual translation supplied by author [Bacillus subtilis]	75	62	891
30	11	9015	7828	gi 153801	enzyme scr-II [Streptococcus mutans]	75	64	1188
31	5	2362	2030	gi 2293211	(AF008220) putative thioedoxin [Bacillus subtilis]	75	53	333
32	9	7484	8359	gnl PID d100560	formamidopyrimidine-DNA glycosylase (Streptococcus mutans)	75	61	876
33	4	1735	1448	gi 413976	ipa-52r gene product [Bacillus subtilis]	75	53	288
33	10	6470	5769	gi 533105	unknown [Bacillus subtilis]	75	56	702

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
33	12	6878	7183	pir A00205 FECL	ferredoxin (4Fe-4S) - Clostridium thermaceticum	75	56	306
36	1	181	2	gi 2088739	(AF003141) strong similarity to the FABP/P2/CRBP/CRABP family of transporters [Caenorhabditis elegans]	75	43	180
38	22	14510	15379	gi 1574058	hypothetical [Haemophilus influenzae]	75	56	870
48	33	23398	24066	gi 1930092	outer membrane protein [Campylobacter jejuni]	75	56	669
51	1	2	319	gi 43985	nifs-like gene [Lactobacillus delbrueckii]	75	55	318
51	10	8318	11683	gi 537192	CG Site No. 620; alternate gene names hs, hsp, hsr, rmx apparent frameshift in GenBank Accession Number X06545 [Escherichia coli]	75	50	3366
54	18	19566	20759	gi 666069	orf2 gene product [Lactobacillus leichmannii]	75	58	1194
57	9	8448	7822	gi 290561	o188 [Escherichia coli]	75	50	627
65	14	6072	6356	gi 606241	30S ribosomal subunit protein S14 [Escherichia coli]	75	64	285
70	4	3071	2472	gi 1256617	adenine phosphoribosyltransferase [Bacillus subtilis]	75	57	600
71	24	30399	29404	gi 1574390	CG-dicarboxylate transport protein [Haemophilus influenzae]	75	57	996
73	2	910	455	gnl PID e249656	YneF [Bacillus subtilis]	75	57	456
79	1	1810	491	gi 1146219	28.2% of identity to the Escherichia coli GTP-binding protein Era; putative [Bacillus subtilis]	75	59	1320
82	6	6360	6536	gi 1655715	BstD [Rhodobacter capsulatus]	75	55	177
83	6	1938	2975	gnl PID e323529	putative PlxX protein [Bacillus subtilis]	75	56	1038
93	11	7368	5317	gi 39989	methionyl-tRNA synthetase [Bacillus stearothermophilus]	75	58	2052
93	13	9409	8699	gi 1591493	glutamine transport ATP-binding protein Q [Methanococcus jannaschii]	75	54	711
95	1	1795	47	gnl PID e323510	Ylov protein [Bacillus subtilis]	75	57	1749
103	2	362	1186	gnl PID e266928	unknown [Mycobacterium tuberculosis]	75	64	825
104	1	691	915	gi 460026	repressor protein [Streptococcus pneumoniae]	75	54	225
113	5	2951	3883	gnl PID d101119	ABC transporter subunit [Synecocystis sp.]	75	55	933
121	1	320	1390	gi 2145131	repressor of class I heat shock gene expression HrcA [Streptococcus mutans]	75	58	1071
127	6	2614	3000	gi 1500451	M. jannaschii predicted coding region MJ1558 [Methanococcus jannaschii]	75	44	387
137	18	10082	10687	gi 393116	P-glycoprotein 5 [Entamoeba histolytica]	75	52	606
149	11	8499	9338	gnl PID d100582	unknown [Bacillus subtilis]	75	55	840

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
151	6	9100	7673	gi 40467	HsdS polypeptide, part of CfrA family [Citrobacter freundii]	75	57	1428
158	1	986	3	gnl PID e253891	UDP-glucose 4-epimerase [Bacillus subtilis]	75	63	984
172	8	5653	6774	gi 142978	glycerol dehydrogenase [Bacillus stearothermophilus]	75	56	1122
172	9	7139	9730	gnl PID e268456	unknown [Mycobacterium tuberculosis]	75	58	2592
173	1	261	79	gnl PID e236469	C10C5.6 [Caenorhabditis elegans]	75	50	183
185	3	3066	2014	gi 1574806	spermidine/putrescine transport ATP-binding protein (potA) [Haemophilus influenzae]	75	56	1053
191	6	5235	4213	gi 149518	phosphoribosyl anthranilate transferase [Lactococcus lactis]	75	61	1023
226	2	1774	1181	gi 2314588	conserved hypothetical protein [Helicobacter pylori]	75	65	594
231	1	1	153	gi 40173	homolog of E. coli ribosomal protein L21 [Bacillus subtilis]	75	57	153
234	1	2	418	gi 2293259	[AF008220] Ytqi [Bacillus subtilis]	75	59	417
279	1	552	151	gi 1119198	unknown protein [Bacillus subtilis]	75	50	402
291	7	3558	3827	gi 40011	ORF17 (AA 1-161) [Bacillus subtilis]	75	48	270
375	2	137	628	gi 410137	ORFX1 [Bacillus subtilis]	75	58	492
6	20	16721	17560	gi 2293323	[AF008220] Ytdi [Bacillus subtilis]	74	53	840
7	6	4682	6052	gi 1354211	PET112-like protein [Bacillus subtilis]	74	60	1371
18	4	3341	2427	gnl PID d101319	Ytqi [Bacillus subtilis]	74	54	915
21	6	5885	4800	gi 1072381	glutaryl-aminopeptidase [Lactococcus lactis]	74	59	1086
24	2	739	548	gi 2314762	[AE000655] ABC transporter, permease protein (yaeE) [Helicobacter pylori]	74	46	192
25	1	2	367	gnl PID d100932	H2O-forming NADH Oxidase [Streptococcus mutans]	74	63	366
38	18	11432	12964	gi 537034	ORF_0488 [Escherichia coli]	74	57	1533
48	10	8924	6669	gi 1513069	P-type adenosine triphosphatase [Listeria monocytogenes]	74	53	2256
55	11	11964	11401	gnl PID e283110	fend [Staphylococcus aureus]	74	64	564
61	2	1782	427	gi 2293216	[AF008220] putative UDP-N-acetylmuramate-alanine ligase [Bacillus subtilis]	74	55	1356
76	10	9414	8065	gnl PID d101325	YqiB [Bacillus subtilis]	74	54	1350
83	2	666	926	pir C33496 C334	hisC homolog - Bacillus subtilis	74	55	261
86	9	8985	8080	gi 683585	prephenate dehydratase [Lactococcus lactis]	74	55	906

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
102	5	5005	5652	gi 143394	OMP-PRPP transferase (Bacillus subtilis)	74	57	648
103	5	4364	3267	gnl pid e323524	Ylon protein (Bacillus subtilis)	74	62	1098
108	7	6864	7592	gnl pid e257631	methyltransferase [Lactococcus lactis]	74	56	729
131	2	478	146	gnl pid d101320	Ygg2 (Bacillus subtilis)	74	45	333
133	2	1380	919	gnl pid e313025	hypothetical protein (Bacillus subtilis)	74	60	462
137	9	6167	6787	gnl pid d100479	Na ⁺ -ATPase subunit D (Enterococcus hirae)	74	53	621
149	4	3008	3883	gnl pid d100581	high level kasamycin resistance (Bacillus subtilis)	74	55	876
157	2	243	824	gi 1573373	methylated-DNA--protein-cysteine methyltransferase (dat1) (Haemophilus influenzae)	74	48	582
164	6	3515	4249	gi 410131	ORFX7 (Bacillus subtilis)	74	48	735
167	7	5446	5201	gi 413927	ipa-3r gene product (Bacillus subtilis)	74	55	246
171	1	1	1818	gnl pid d102251	beta-galactosidase (Bacillus circulans)	74	62	1818
172	4	1064	2392	gi 466474	cellobiose phosphotransferase enzyme II'' (Bacillus stearothermophilus)	74	50	1329
185	1	326	3	gi 1573646	Mg(2+) transport ATPase protein C (mgTC) (SP:P22037) (Haemophilus influenzae)	74	68	324
188	2	1089	2018	gi 1573008	ATP dependent translocator homolog (msbA) (Haemophilus influenzae)	74	44	930
189	11	6491	7174	gi 1661199	sakacin A production response regulator (Streptococcus mutans)	74	60	684
210	2	520	1287	gi 2293207	(AP008220) YcmQ (Bacillus subtilis)	74	60	768
261	1	836	192	gi 665983	putative ATP binding subunit (Bacillus subtilis)	74	55	645
263	3	1619	3655	gi 663232	Similarity with S. cerevisiae hypothetical 137.7 kD protein in subtelomeric Y' repeat region (Saccharomyces cerevisiae)	74	42	2037
265	2	844	1227	gi 49272	Asparaginase (Bacillus licheniformis)	74	64	384
368	1	1	942	gi 603998	unknown (Saccharomyces cerevisiae)	74	39	942
7	16	13357	11921	gnl pid d101324	Yqbx (Bacillus subtilis)	73	57	1437
17	10	5706	5449	gnl pid e305362	unnamed protein product (Streptococcus thermophilus)	73	47	258
31	2	522	244	gnl pid d100576	single strand DNA binding protein (Bacillus subtilis)	73	55	279
32	6	5667	6194	gnl pid d101315	YqfG (Bacillus subtilis)	73	58	528
34	15	10281	9790	gnl pid d102151	(AB001684) ORP42c (Chlorella vulgaris)	73	46	492

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
40	12	9876	9226	gi 1173517	riboflavin synthase alpha subunit [Actinobacillus pleuropneumoniae]	73	55	651
55	2	3592	839	gnl PID d101887	cation-transporting ATPase PaCL [Synechocystis sp.]	73	60	2754
55	18	17494	16586	gnl PID e265580	unknown [Mycobacterium tuberculosis]	73	52	909
65	16	7213	7767	gi 143419	ribosomal protein L6 [Bacillus stearothermophilus]	73	60	555
66	3	3300	3659	gnl PID e269883	LacP [Lactobacillus casei]	73	52	360
70	10	5557	5733	gi 1857631	envelope protein [Human immunodeficiency virus type 1]	73	60	177
71	4	6133	8262	gnl PID e322063	se-1,4-galactosyltransferase [Streptococcus pneumoniae]	73	45	2130
72	1	3	851	gi 2293177	[AF008220] transporter [Bacillus subtilis]	73	50	849
76	7	7019	6195	gnl PID d101325	YqjF [Bacillus subtilis]	73	66	825
76	12	10009	9533	gi 1573086	uridine kinase [uridine monophosphokinase] (udk) [Haemophilus influenzae]	73	54	477
80	7	8113	9372	gi 1377823	aminopeptidase [Bacillus subtilis]	73	60	1260
97	5	3389	1668	gnl PID d101954	dihydroxyacid dehydratase [Synechocystis sp.]	73	54	1722
98	9	6912	7619	gnl PID e314991	FtsG [Mycobacterium tuberculosis]	73	54	708
108	11	10928	10440	gi 388109	regulatory protein [Enterococcus faecalis]	73	54	489
128	6	3632	4222	gi 1685111	orf1091 [Streptococcus thermophilus]	73	63	591
138	2	1575	394	gi 147326	transport protein [Escherichia coli]	73	60	1182
140	13	12538	11903	pir E33402 E534	serine O-acetyltransferase (EC 2.3.1.30) - Bacillus stearothermophilus	73	55	636
162	5	5701	4991	gnl PID e323511	putative YhaQ protein [Bacillus subtilis]	73	50	711
164	4	2323	2790	gi 1592076	hypothetical protein (SP:P25768) [Methanococcus jannaschii]	73	52	468
164	8	4815	5546	gi 410137	ORFX13 [Bacillus subtilis]	73	56	732
170	5	4394	5302	gnl PID d100959	homologue of unidentified protein of E. coli [Bacillus subtilis]	73	46	909
178	7	3893	4855	gi 46242	modulation protein B, 5' end [Rhizobium loti]	73	56	963
204	6	5096	4278	gnl PID e214719	PICR protein [Bacillus thuringiensis]	73	41	819
213	2	832	2037	gi 1565296	ribosomal protein S1 homologue; sequence specific DNA-binding protein [Leuconostoc lactis]	73	55	1206
231	2	84	287	gi 40173	homolog of E.coli ribosomal protein L21 [Bacillus subtilis]	73	61	204
237	1	2	505	gi 1773151	adenine phosphoribosyltransferase [Escherichia coli]	73	51	504

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
269	1	2	691	gnl PID d101328	YqIX [Bacillus subtilis]	73	36	690
289	2	1272	832	plr A02771 R7MC	ribosomal protein L7/L12 - Micrococcus luteus			
343	1	14	484	gi 1788125	(AE000276) hypothetical 30.4 kD protein in man2-cspC intergenic region [Escherichia coli]	73	66	441
356	1	222	4	gi 2149905	D-glutamic acid adding enzyme [Enterococcus faecalis]	73	50	219
7	5	3165	4691	gnl PID d101833	amidase [Synecocystis sp.]	72	52	1527
7	9	7195	7647	gi 146976	nusB [Escherichia coli]	72	54	453
7	17	13743	13300	gnl PID e289141	similar to hydroxymyristoyl-(acyl carrier protein) dehydratase [Bacillus subtilis]	72	59	444
22	19	15637	16224	gnl PID d101929	ribosome releasing factor. [Synecocystis sp.]	72	51	588
33	17	12111	11425	gnl PID d101190	ORF3 [Streptococcus mutans]	72	55	687
34	7	7147	5627	gi 396501	aspartyl-tRNA synthetase [Thermus thermophilus]	72	52	1521
38	23	15372	16085	plr H64108 H641	L-ribulose-phosphate 4-epimerase (araD) homolog - Haemophilus influenzae (strain Rd KW20)	72	54	714
39	5	5094	6905	gnl PID e254877	unknown [Mycobacterium tuberculosis]	72	56	1812
40	6	4469	4636	gi 153672	lactose repressor [Streptococcus mutans]	72	58	168
48	2	1459	1253	gi 310380	Inhibin beta-A-subunit [Ovis aries]	72	33	207
48	29	21729	22424	gi 2314329	(AE000623) glutamine ABC transporter, permease protein (glnP) [Helicobacter pylori]	72	49	696
50	5	4529	3288	gi 1750108	Ynba [Bacillus subtilis]	72	54	1242
51	3	1044	2282	gi 2293230	(AF008220) YrbJ [Bacillus subtilis]	72	54	1239
52	13	13681	13938	gi 142521	deoxyribodipyrimidine photolyase [Bacillus subtilis]	72	45	258
55	1	841	35	gi 882518	ORF_0304; GTG start [Escherichia coli]	72	59	807
75	5	2832	3191	gnl PID e209886	mercuric resistance operon regulatory protein [Bacillus subtilis]	72	44	360
76	6	6229	5771	gi 142450	ahrC protein [Bacillus subtilis]	72	53	459
79	5	5065	4592	gi 2293279	(AF008220) YtcG [Bacillus subtilis]	72	46	474
87	14	14726	12309	gnl PID e323502	putative P1A protein [Bacillus subtilis]	72	52	2418
91	1	444	662	gi 500691	MYO1 gene product [Saccharomyces cerevisiae]	72	50	219
91	7	4516	4764	gi 829615	skeletal muscle sodium channel alpha-subunit [Equus caballus]	72	38	249

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
95	2	2004	1717	gnl PID e323527	putative Asp23 protein [Bacillus subtilis]	72	40	288
109	1	1452	118	gi 143331	alkaline phosphatase regulatory protein [Bacillus subtilis]	72	52	1335
126	1	3	2192	gnl PID d101831	glutamine-binding periplasmic protein [Synechocystis sp.]	72	46	2190
130	3	1735	2478	gi 2415396	[AF015775] carboxypeptidase [Bacillus subtilis]	72	53	744
137	6	2585	2929	gi 472922	v-type Na-ATPase [Enterococcus hirae]	72	46	345
140	10	9601	9203	gi 49224	URF 4 [Synechococcus sp.]	72	48	399
146	5	1906	1247	gnl PID e324945	hypothetical protein [Bacillus subtilis]	72	45	660
147	2	2084	1083	gnl PID e325016	hypothetical protein [Bacillus subtilis]	72	56	1002
147	5	6156	5146	gi 472327	TPP-dependent acetoin dehydrogenase beta-subunit [Clostridium magnum]	72	56	1011
148	8	5381	6433	gi 974332	NAD(PH)-dependent dihydroxyacetone-phosphate reductase [Bacillus subtilis]	72	54	1053
148	14	10256	9675	gnl PID d101319	YqgN [Bacillus subtilis]	72	50	582
159	8	4005	4949	gi 1788770	[AE000330] o463; 24 pct identical (44 gaps) to 338 residues from penicillin-binding protein 4*, FBPE_BACSU SW: P32959 (451 aa) [Escherichia coli]	72	43	945
172	10	9907	10620	gi 763387	unknown [Saccharomyces cerevisiae]	72	55	714
220	3	2862	3602	gi 1574175	hypothetical [Haemophilus influenzae]	72	50	741
267	1	3	449	gi 290513	[f470 [Escherichia coli]	72	48	447
281	2	899	540	gnl PID d100964	homologue of aspartokinase 2 alpha and beta subunits LysC of B. subtilis [Bacillus subtilis]	72	45	360
290	1	1018	14	gi 474195	This ORF is homologous to a 40.0 kd hypothetical protein in the htrB 3' region from E. coli, Accession Number X61000 [Mycoplasma-like organism]	72	54	1005
300	1	63	587	gi 746399	transcription elongation factor [Escherichia coli]	72	50	525
316	1	1326	4	gi 158127	protein kinase C [Drosophila melanogaster]	72	40	1323
342	1	227	3	gnl PID d101164	unknown [Bacillus subtilis]	72	54	225
354	1	1	1005	gnl PID d102048	C. thermocellum beta-glucosidase; P26208 (985) [Bacillus subtilis]	72	52	1005
6	10	8134	10467	gnl PID e264329	unknown [Mycobacterium tuberculosis]	71	57	2334
7	20	16231	15464	gi 18046	[3-oxoacyl-(acyl-carrier protein) reductase [Cuphea lanceolata]	71	52	768
15	1	1297	2	gnl PID d100571	replicative DNA helicase [Bacillus subtilis]	71	51	1296
15	4	4435	3869	gi 499384	orf189 [Bacillus subtilis]	71	47	567

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
18	6	5120	4218	gnl PID d101318	YqgG [Bacillus subtilis]	71	51	903
29	1	1	540	gi 1773142	similar to the 20.2kd protein in TEB-EXOA region of B. subtilis [Escherichia coli]	71	56	540
38	20	13327	13830	gi 537036	ORF_0158 [Escherichia coli]	71	48	504
51	12	15015	12676	gi 149528	dipeptidyl peptidase IV [Lactococcus lactis]	71	55	2340
55	23	21040	20585	gi 2343285	(AF015453) surface located protein [Lactobacillus rhamnosus]	71	58	456
60	2	705	265	gnl PID d101320	YqgZ [Bacillus subtilis]	71	44	441
71	18	24679	26226	gi 580920	rodD (gtA) polypeptide (AA 1-673) [Bacillus subtilis]	71	44	1548
71	25	30587	30360	gi 606028	ORF_0414; Geneplot suggests frameshift near start but none found [Escherichia coli]	71	50	228
72	6	5239	6729	gi 580835	lysine decarboxylase [Bacillus subtilis]	71	48	1491
72	14	11991	12878	gi 624085	similar to rat beta-alanine synthetase encoded by GenBank Accession Number S27881; contains ATP/GTP binding motif (Paramecium bursaria Chlorella virus 1)	71	54	888
73	11	7269	7033	gi 1906594	PN1 [Rattus norvegicus]	71	42	237
74	6	10385	8517	gi 1573733	prolyl-tRNA synthetase (proS) [Haemophilus influenzae]	71	52	1869
81	9	5772	6578	gi 147404	mannose permease subunit II-M-Man [Escherichia coli]	71	45	807
86	5	4602	3604	gnl PID e322063	ss-1,4-galactosyltransferase [Streptococcus pneumoniae]	71	53	999
105	4	3619	4707	gi 2323341	(AF014460) PepQ [Streptococcus mutans]	71	58	1089
106	13	13557	12955	gi 1519287	LemA [Listeria monocytogenes]	71	48	603
114	2	1029	1979	gi 310303	mosA [Rhizobium meliloti]	71	55	951
122	2	564	1205	gi 1649037	glutamine transport ATP-binding protein GLNQ [Salmonella typhimurium]	71	50	642
132	5	9018	7063	gnl PID d102049	H. influenzae hypothetical ABC transporter; P44808 (974) [Bacillus subtilis]	71	51	1956
140	1	1141	227	gi 1673788	(AE000015) Mycoplasma pneumoniae, fructose-bisphosphate aldolase; similar to Swiss-Prot Accession Number P13243, from B. subtilis [Mycoplasma pneumoniae]	71	49	915
140	5	5635	4973	gnl PID d100964	homologue of hypothetical protein in a rapamycin synthesis gene cluster of Streptomyces hygroscopicus [Bacillus subtilis]	71	48	663
141	7	7369	7845	gnl PID d102005	(AB001488) FUNCTION UNKNOWN, SIMILAR PRODUCT IN E. COLI AND MYCOPLASMA PNEUMONIAE. [Bacillus subtilis]	71	51	477

TABLE 2
S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
193	1	1	165	gi 46912	ribosomal protein L13 (Staphylococcus carnosus)	71	59	165
194	3	2205	1594	gi 535351	CodY (Bacillus subtilis)	71	52	612
199	3	1510	1319	gi 2182574	[AE000090] Y4pE (Rhizobium sp. NGR234)	71	45	192
208	2	2616	3752	gi 1787378	[AE000213] hypothetical protein in purB 5' region (Escherichia coli)	71	57	1137
209	2	2022	1141	gi 41432	[epC gene product (Escherichia coli)]	71	46	882
210	5	1911	3071	gi 49316	[ORF2 gene product (Bacillus subtilis)]	71	45	1161
210	6	3069	3386	gi 580900	[ORF3 gene product (Bacillus subtilis)]	71	48	318
212	2	3561	1381	gi 557567	[ribonucleotide reductase R1 subunit (Mycobacterium tuberculosis)]	71	53	2181
233	3	2003	2920	gnl PID d101320	[YqgR (Bacillus subtilis)]	71	50	918
244	1	13	1053	gnl PID d100964	[homologue of aspartokinase 2 alpha and beta subunits LysC of B. subtilis (Bacillus subtilis)]	71	55	1041
251	2	1008	1874	gi 755601	[unknown (Bacillus subtilis)]	71	46	867
282	2	906	712	gi 1353874	[unknown (Rhodobacter capsulatus)]	71	46	195
312	4	2137	1565	gnl PID d102245	[AB005554] yxB (Bacillus subtilis)	71	34	573
338	1	3	683	gi 1591045	[hypothetical protein (SP:P31466) (Methanococcus jannaschii)]	71	48	681
346	1	3	164	gi 1591234	[hypothetical protein (SP:P42297) (Methanococcus jannaschii)]	71	36	162
374	1	619	2	gi 397526	[clumping factor (Staphylococcus aureus)]	71	23	618
377	1	688	2	gi 397526	[clumping factor (Staphylococcus aureus)]	71	23	687
3	8	7419	6958	gnl PID e269486	[unknown (Bacillus subtilis)]	70	42	462
3	10	8395	9075	gnl PID e255543	[putative iron dependant repressor (Staphylococcus epidermidis)]	70	46	681
7	14	11024	10254	gnl PID d100290	[undefined open reading frame (Bacillus stearothermophilus)]	70	55	771
7	18	14213	13719	gnl PID d101090	[biotin carboxyl carrier protein of acetyl-CoA carboxylase (Synechocystis sp.)]	70	56	495
9	2	1057	287	gnl PID d100581	[unknown (Bacillus subtilis)]	70	52	771
12	4	2610	1789	gnl PID d101195	[YycJ (Bacillus subtilis)]	70	52	822
21	2	2586	1846	gi 2293447	[AF008930] ATPase (Bacillus subtilis)]	70	54	741
22	13	10955	11512	gi 1165295	[Ydr540cp (Saccharomyces cerevisiae)]	70	50	558
30	6	4315	3980	gi 39478	[ATP binding protein of transport ATPases (Bacillus firmus)]	70	51	336

TABLE 2 S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
31	1	370	113	gi 62792	single-stranded DNA binding protein (unidentified eubacterium)	70	36	258
33	15	10639	9521	gi 1161219	homologous to D-amino acid dehydrogenase enzyme [Pseudomonas aeruginosa]	70	50	1119
38	6	3812	4312	gi 2058547	ComYD (Streptococcus gordonii)	70	48	501
38	25	17986	18477	gi 537033	ORF_356 [Escherichia coli]	70	58	492
40	13	11054	9846	gi 1173516	riboflavin-specific deaminase [Actinobacillus pleuropneumoniae]	70	52	1209
42	2	722	1954	gi 1146183	putative [Bacillus subtilis]	70	51	1233
43	3	2373	1612	gi 1591493	glutamine transport ATP-binding protein Q [Methanococcus jannaschii]	70	48	762
45	8	9197	8049	gnl PID d102036	subunit of ADP-glucose pyrophosphorylase [Bacillus stearothermophilus]	70	54	1149
59	2	567	956	gnl PID d100302	neopullulanase [Bacillus sp.]	70	42	390
60	3	1874	795	gnl PID e276466	aminopeptidase P [Lactococcus lactis]	70	48	1080
61	4	5553	2437	gnl PID e275074	SNF [Bacillus cereus]	70	51	3117
61	7	7914	6802	gi 1573037	cystathionine gamma-synthase (metB) [Haemophilus influenzae]	70	52	1113
63	7	5372	7222	gnl PID d100974	unknown [Bacillus subtilis]	70	54	1851
68	7	7126	6962	gi 1263014	emm18.1 gene product [Streptococcus pyogenes]	70	37	165
72	12	10081	10911	gi 2313093	(AE000524) carboxynorspermidine decarboxylase (nspC) [Helicobacter pylori]	70	56	831
75	10	7888	8124	gi 1877423	galactose-1-P-uridyl transferase [Streptococcus mutans]	70	59	237
79	3	3424	2525	gi 39881	ORF 311 (AA 1-311) [Bacillus subtilis]	70	47	900
87	10	9369	7324	gnl PID e323506	putative Pkn2 protein [Bacillus subtilis]	70	52	2046
96	14	10640	11788	gi 1573209	tRNA-guanine transglycosylase (tgt) [Haemophilus influenzae]	70	52	1149
113	2	574	1086	gi 433630	A180 [Saccharomyces cerevisiae]	70	59	513
123	5	2901	3461	gnl PID d100585	unknown [Bacillus subtilis]	70	45	561
125	5	4593	4282	gnl PID e276474	capacitative calcium entry channel 1 [Bos taurus]	70	35	312
129	5	4500	3454	gnl PID d101314	yqer [Bacillus subtilis]	70	47	1047
133	3	2608	1394	gi 2293312	(AF008220) YtfP [Bacillus subtilis]	70	50	1215
135	1	420	662	gnl PID e265530	yorFE [Streptococcus pneumoniae]	70	47	243
137	3	438	932	gi 472919	v-type Na-ATPase [Enterococcus hirae]	70	57	495
138	1	440	3	gi 147336	transmembrane protein [Escherichia coli]	70	42	438

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
140	16	18796	16364	gi 976441	N5-methyltetrahydrofolate homocysteine methyltransferase [Saccharomyces cerevisiae]	70	53	2433
167	10	8263	6695	gi 149535	D-alanine activating enzyme [Lactobacillus casei]	70	52	1569
204	4	3226	2747	gnl PID d102049	E. coli hypothetical protein; P31805 (267) [Bacillus subtilis]	70	51	480
207	3	2627	2869	gnl PID e309213	racGAP [Dictyostellium discoideum]	70	45	243
282	3	1136	882	gi 1353874	unknown [Rhodobacter capsulatus]	70	50	255
6	21	17554	18453	gnl PID e233879	hypothetical protein [Bacillus subtilis]	69	44	900
6	22	18482	19471	gi 580883	ipa-88d gene product [Bacillus subtilis]	69	53	990
22	6	4682	5824	gi 2209379	[AF006720] ProJ [Bacillus subtilis]	69	48	1143
22	9	7992	8651	gnl PID d100580	unknown [Bacillus subtilis]	69	51	660
22	12	9871	10767	gnl PID d100581	unknown [Bacillus subtilis]	69	51	897
27	7	5857	5348	gnl PID d102012	(AB001488) FUNCTION UNKNOWN. [Bacillus subtilis]	69	28	510
36	10	7294	10116	gi 437916	isoleucyl-tRNA synthetase [Staphylococcus aureus]	69	53	2823
38	1	2	1090	gi 141900	alcohol dehydrogenase (EC 1.1.1.1) [Alcaligenes eutrophus]	69	48	1089
40	14	11333	11944	gi 1573280	Holliday junction DNA helicase (ruva) [Haemophilus influenzae]	69	44	612
40	15	11942	12517	gi 1573653	DNA-3-methyladenine glycosidase I (tagI) [Haemophilus influenzae]	69	50	576
45	6	6947	5490	gi 580887	starch (bacterial glycogen) synthase [Bacillus subtilis]	69	47	1458
48	34	24932	24153	gnl PID e233870	hypothetical protein [Bacillus subtilis]	69	36	780
49	6	6183	6521	gi 396297	similar to'phosphotransferase system enzyme II [Escherichia coli]	69	50	339
49	8	7586	8338	gi 396420	similar to Alcaligenes eutrophus pHC1 D-ribulose-5-phosphate 3 epimerase [Escherichia coli]	69	49	753
55	6	8262	7033	gi 1146238	poly(A) polymerase [Bacillus subtilis]	69	50	1230
59	3	954	2333	gnl PID e313038	hypothetical protein [Bacillus subtilis]	69	54	1380
62	3	1170	1418	gnl PID d101915	hypothetical protein [Synecocystis sp.]	69	49	249
63	8	7298	7762	gi 293017	ORF3 (put.); putative [Lactococcus lactis]	69	42	465
66	4	3657	5081	gi 153755	phospho-beta-D-galactosidase (EC 3.2.1.85) [Lactococcus lactis cremoris]	69	49	1425
66	5	5126	6829	gi 433809	enzyme II [Streptococcus mutans]	69	46	1704
71	6	10017	10664	gnl PID e322063	ss-1,4-galactosyltransferase [Streptococcus pneumoniae]	69	39	648

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
71	121	27730	27966	gnl PID d100649	DE-cadherin [Drosophila melanogaster]	69	30	237
77	1	1	237	gi 287870	[groES gene product [Lactococcus lactis]	69	44	237
81	5	3622	4101	gi 1573605	[fucose operon protein (fucU) [Haemophilus influenzae]	69	52	480
83	1	40	714	pic C33496 C334	hisc homolog - Bacillus subtilis	69	46	675
83	16	15742	16335	gi 143372	[phosphoribosyl glycineamide formyltransferase (PUR-N) [Bacillus subtilis]	69	46	594
85	2	1212	916	gi 194097	[IFN-response element binding factor 1 [Mus musculus]	69	48	297
91	5	3678	4274	gi 1574712	[anaerobic ribonucleoside-triphosphate reductase activating protein (nrdG) [Haemophilus influenzae]	69	44	597
98	5	3247	4032	gnl PID d100262	LivP protein [Salmonella typhimurium]	69	51	786
108	5	4085	5056	gnl PID e257629	[transcription factor [Lactococcus lactis]	69	49	972
126	3	3078	4568	gnl PID d101329	YqjJ [Bacillus subtilis]	69	49	1491
131	6	4121	2889	gnl PID d101314	Yqer [Bacillus subtilis]	69	47	1233
136	2	1505	2299	gnl PID d100581	unknown [Bacillus subtilis]	69	47	795
149	5	3852	4763	gnl PID e233525	YioQ protein [Bacillus subtilis]	69	50	912
149	12	9336	10655	gi 151571	Homology with E.coli and P.aeruginosa lysA gene; product of unknown function; putative [Pseudomonas syringae]	69	52	1320
153	4	3191	3829	gi 1710373	BrnQ [Bacillus subtilis]	69	44	639
169	3	849	2324	gnl PID d100582	temperature sensitive cell division [Bacillus subtilis]	69	49	1476
180	1	566	3	gi 488339	[alpha-amylase [unidentified cloning vector]	69	50	564
212	1	1196	231	gi 1395209	[ribonucleotide reductase R2-2 small subunit [Mycobacterium tuberculosis]	69	53	966
226	1	2	661	pir J02285 J022	nodulin-26 - soybean	69	41	660
233	5	3249	4766	gi 472918	v-type Na-ATPase [Enterococcus hirae]	69	56	1518
235	3	660	1766	gi 148945	[methylase [Haemophilus influenzae]	69	43	1107
243	2	865	2361	gnl PID d100325	ORF5 [Barley yellow dwarf virus]	69	69	1497
251	3	2899	1967	gi 2289231	[macrolide-efflux protein [Streptococcus agalactiae]	69	51	933
310	1	1	282	gnl PID e322442	[peptide deformylase [Clostridium beijerinckii]	69	55	282
369	1	868	2	gi 397526	[clumping factor [Staphylococcus aureus]	69	22	867
370	1	749	3	gi 397526	[clumping factor [Staphylococcus aureus]	69	21	747

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
379	1	44	280	gnl PID d100649	DE-cadherin (Drosophila melanogaster)	69	30	237
388	1	260	72	gi 1787524	(AE000225) hypothetical 32.7 kD protein in trpL-btuR intergenic region [Escherichia coli]	69	44	189
1	2	2006	3040	gnl PID d101809	ABC transporter [Synechocystis sp.]	68	43	1035
12	5	3958	2600	gi 2182992	histidine kinase (Lactococcus lactis cremoris)	68	45	1359
15	2	1790	1311	pir S16974 RS8S	ribosomal protein L9 - Bacillus stearothermophilus	68	56	480
16	6	7353	5701	gi 1787041	(AE000184) o530; This 530 aa orf is 33 pct identical (14 gaps) to 525 residues of an approx. 640 aa protein YHES_HAEIN SW: P44808 [Escherichia coli]	68	45	1653
17	12	6479	6805	gi 553165	acetylcholinesterase (Homo sapiens)	68	68	327
20	13	14128	14505	gi 142700	P competence protein (ttg start codon) (put.); putative [Bacillus subtilis]	68	40	378
22	32	24612	25397	gi 289262	comE ORF3 [Bacillus subtilis]	68	36	786
30	7	4548	4288	gi 311388	ORF1 (Azorhizobium caulinodans)	68	46	261
36	5	3911	4585	gi 1573041	hypothetical [Haemophilus influenzae]	68	54	675
46	6	5219	6040	gi 1790131	(AE000446) hypothetical 29.7 kD protein in ibpA-gyrB intergenic region [Escherichia coli]	68	47	822
54	10	6235	7086	gi 882579	CG Site No. 29739 [Escherichia coli]	68	55	852
55	5	7069	5165	gnl PID d101914	ABC transporter [Synechocystis sp.]	68	45	1905
71	3	6134	5613	gi 1573353	outer membrane integrity protein (tolA) [Haemophilus influenzae]	68	50	522
71	10	15342	16613	gi 580866	ipa-12d gene product [Bacillus subtilis]	68	31	1272
71	12	17560	18792	gi 44073	SecY protein [Lactococcus lactis]	68	35	1233
71	17	22295	24703	gi 1762349	involved in protein export [Bacillus subtilis]	68	50	2409
73	16	10208	9729	gi 1353537	dUTPase [Bacteriophage phi]	68	51	480
86	18	17198	16011	gi 413943	ipa-19d gene product [Bacillus subtilis]	68	53	1188
87	17	17491	15866	gi 150209	ORF 1 [Mycoplama mycoides]	68	43	1626
89	6	5139	4354	gi 1498824	M. jannaschii predicted coding region MJ0062 [Methanococcus jannaschii]	68	40	786
89	11	8021	8242	gi 150974	4-oxalocrotonate tautomerase [Pseudomonas putida]	68	43	222
97	8	6755	5394	gi 2367358	(AE000491) hypothetical 52.9 kD protein in aidB-rpsF intergenic region [Escherichia coli]	68	41	1362

TABLE 2
S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
98	3	1418	2308	gnl PID d100261	LiVA protein (Salmonella typhimurium)	68	40	891
99	13	16414	17280	gi 455363	regulatory protein (Streptococcus mutans)	68	50	867
115	3	5054	3693	gi 466474	cellulose phosphotransferase enzyme II'' (Bacillus stearothermophilus)	68	44	1362
124	7	3394	3221	gnl PID d100702	cut14 protein (Schizosaccharomyces pombe)	68	56	174
125	2	2923	1922	gi 450566	transmembrane protein (Bacillus subtilis)	68	50	1002
132	2	4858	2888	gnl PID d101732	DNA ligase (Synechocystis sp.)	68	52	1971
140	7	7765	7580	gi 1209711	unknown (Saccharomyces cerevisiae)	68	47	186
150	1	539	3	gi 402490	ADP-ribosylarginine hydrolase (Mus musculus)	68	59	537
164	1	58	867	gnl PID e255114	glutamate racemase (Bacillus subtilis)	68	49	810
164	2	819	1835	gnl PID e255117	hypothetical protein (Bacillus subtilis)	68	50	1017
169	7	3946	4104	pir B54545 B545	hypothetical protein - Lactococcus lactis subsp. lactis plasmid pSL2	68	40	159
170	4	4247	4396	gi 304146	spore coat protein (Bacillus subtilis)	68	52	150
171	8	6002	7054	gi 38722	precursor (aa -20 to 381) (Acinetobacter calcoaceticus)	68	54	1053
198	3	2473	1871	gnl PID e313075	hypothetical protein (Bacillus subtilis)	68	46	603
211	2	969	1802	gi 1439528	EIIC-man (Lactobacillus curvatus)	68	45	834
214	8	4926	4231	gnl PID d102049	H. influenzae hypothetical protein; P43990 (182) (Bacillus subtilis)	68	50	696
217	6	4955	5170	gnl PID e326966	similar to B. vulgaris CMS-associated mitochondrial ... (reverse transcriptase) (Arabidopsis thaliana)	68	36	216
218	7	3930	4745	gi 2293198	(AF008220) YtgP (Bacillus subtilis)	68	38	816
220	6	4628	4338	gnl PID e325791	(AJ000005) orf1 (Bacillus megaterium)	68	51	291
236	1	746	108	gi 410137	ORFX13 (Bacillus subtilis)	68	46	639
237	2	675	1451	gi 396348	homoserine transuccinylase (Escherichia coli)	68	49	777
250	4	771	1229	gi 310859	ORF2 (Synechococcus sp.)	68	50	459
254	1	517	155	gi 1787105	(AE000189) o648 was o669; This 669 aa orf is 40 pct identical (1 gaps) to 217 residues of an approx. 232 aa protein YBBA_HAEIN SW: P45247 (Escherichia coli)	68	44	363
337	1	1	774	gnl PID e261990	putative orf (Bacillus subtilis)	68	47	774
345	1	3	653	gi 149513	thymidylate synthase (EC 2.1.1.45) (Lactococcus lactis)	68	61	651

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
386	2	417	4	gi1573353	outer membrane integrity protein (tolA) (Haemophilus influenzae)	68	51	414
2	4	5722	4697	gi1592141	M. jannaschii predicted coding region MJ1507 [Methanococcus jannaschii]	67	26	1026
3	6	5397	4591	gi1229175	(AF008220) signal transduction regulator (Bacillus subtilis)	67	44	807
5	2	2301	574	gi1231385	(AE000547) para-aminobenzoate synthetase (pabB) (Helicobacter pylori)	67	48	1728
6	19	16063	16758	gi1413931	ipa-7d gene product (Bacillus subtilis)	67	41	696
22	8	7094	7897	gi11928962	pyroline-5-carboxylate reductase (Actinidia deliciosa)	67	51	804
29	10	8335	9072	gi1468745	gtcR gene product (Bacillus brevis)	67	41	738
31	3	1379	585	gi12425123	(AF019986) PkAB (Dictyostelium discoideum)	67	49	795
32	11	8849	10150	gi142029	ORF1 gene product (Escherichia coli)	67	47	1302
36	16	14830	15546	gi1592142	ABC transporter, probable ATP-binding subunit (Methanococcus jannaschii)	67	43	717
38	9	4958	5392	gnlPID e214803	T22B3.3 (Caenorhabditis elegans)	67	47	435
38	21	13775	14512	gi1537037	ORF_o216 (Escherichia coli)	67	52	738
45	9	10428	9181	gi1551710	branching enzyme (gigB) (EC 2.4.1.18) (Bacillus stearothermophilus)	67	51	1248
48	23	18344	17514	gi1413949	ipa-25d gene product (Bacillus subtilis)	67	50	831
50	2	1773	952	gnlPID d101330	YqjQ (Bacillus subtilis)	67	55	822
53	1	431	3	gi1574291	fimbrial transcription regulation repressor (pilB) (Haemophilus influenzae)	67	40	429
55	13	12740	11946	gnlPID e252990	ORF YDL037c (Saccharomyces cerevisiae)	67	51	795
61	9	9210	8329	gnlPID e264711	ATP-binding cassette transporter A (Staphylococcus aureus)	67	50	882
71	2	5614	6117	gi1197667	vitellogenin (Anolis pulchellus)	67	36	504
81	7	4489	4983	gi1142714	phosphoenolpyruvate:mannose phosphotransferase element IIB (Lactobacillus curvatus)	67	42	495
83	7	2957	3214	gi11276746	Acyl carrier protein (Porphyra purpurea)	67	37	258
86	8	8140	6809	gi1147744	PSR (Enterococcus hirae)	67	45	1332
97	3	986	1366	gnlPID d102235	(AB000631) unnamed protein product (Streptococcus mutans)	67	43	381
102	1	601	1413	gi1682765	mecB gene product (Escherichia coli)	67	36	813
106	3	1109	1987	gi1148921	LicD protein (Haemophilus influenzae)	67	43	879
115	4	5982	5656	gi1895750	putative cellobiose phosphotransferase enzyme III (Bacillus subtilis)	67	44	327

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
115	7	8421	8077	gi 466473	cellobiose phosphotransferase enzyme II' (Bacillus stearothermophilus)	67	51	345
127	13	8127	7021	gi 147326	transport protein (Escherichia coli)	67	45	1107
136	3	2215	2859	gnl PID d100581	unknown (Bacillus subtilis)	67	49	645
140	21	23317	20906	gnl PID d101912	phenylalanyl-tRNA synthetase (Synechocystis sp.)	67	43	2412
146	6	2894	1893	gi 2182994	histidine kinase (Lactococcus lactis cremoris)	67	44	1002
151	8	11476	11117	gnl PID d100085	ORF129 (Bacillus cereus)	67	48	360
160	10	7453	8646	gi 2281317	OrfB; similar to a Streptococcus pneumoniae putative membrane protein encoded by GenBank Accession Number X99400; inactivation of the OrfB gene leads to UV-sensitivity and to decrease of homologous recombination (plasmidic test) (Lactococcus l)	67	46	1194
163	3	3099	4505	gnl PID d101317	YqfR (Bacillus subtilis)	67	47	1407
167	8	6704	5454	gi 1161933	DltB (Lactobacillus casei)	67	45	1251
169	4	2322	2879	gnl PID d101331	YqkG (Bacillus subtilis)	67	41	558
171	11	7656	8384	gi 153841	pneumococcal surface protein A (Streptococcus pneumoniae)	67	50	729
188	3	1930	3723	gi 1542975	AbcB (Thermoanaerobacterium thermosulfurigenes)	67	46	1794
189	6	3599	3141	gnl PID e325178	Hypothetical protein (Bacillus subtilis)	67	52	459
205	3	1663	2211	gi 606073	ORF_0169 (Escherichia coli)	67	47	549
207	4	2896	3456	gi 2276374	DtxR/iron regulated lipoprotein precursor (Corynebacterium diphtheriae)	67	49	561
217	3	4086	3703	gi 895750	putative cellobiose phosphotransferase enzyme III (Bacillus subtilis)	67	42	384
246	2	291	662	gi 1842438	unknown (Bacillus subtilis)	67	43	372
252	1	2	745	gi 2351768	PspA (Streptococcus pneumoniae)	67	41	744
265	3	1134	1811	gi 2313847	(AE000585) L-asparaginase II (ansB) (Helicobacter pylori)	67	42	678
295	1	1	375	gi 2276374	DtxR/iron regulated lipoprotein precursor (Corynebacterium diphtheriae)	67	43	375
1	7	4898	5146	gnl PID e255179	unknown (Mycobacterium tuberculosis)	66	56	249
3	1	389	3	gnl PID e269548	Unknown (Bacillus subtilis)	66	48	387
3	20	19267	20805	gi 39956	IGlc (Bacillus subtilis)	66	50	1539
4	3	2545	2718	gi 1787564	(AE000228) phage shock protein C (Escherichia coli)	66	36	174
5	9	13197	12592	gi 1574291	fimbrial transcription regulation repressor (pilB) (Haemophilus influenzae)	66	46	606

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
9	4	2872	1451	gnl PID e266928	unknown [Mycobacterium tuberculosis]	66	43	1422
12	2	1469	1200	gi 520407	orf2; GTG start codon [Bacillus thuringiensis]	66	42	270
15	12	10979	9897	gi 2314738	(AE000653) translation elongation factor EF-Ts (tsf) [Helicobacter pylori]	66	49	1083
16	2	1312	734	gnl PID d102245	(AB005554) yxbF [Bacillus subtilis]	66	35	579
22	3	1372	1851	gi 1480916	signal peptidase type II [Lactococcus lactis]	66	38	480
22	7	5828	7096	gnl PID e206261	gamma-glutamyl phosphate reductase [Streptococcus thermophilus]	66	51	1269
22	20	16194	17138	gnl PID e281914	YitL [Bacillus subtilis]	66	50	945
30	2	530	976	gi 2314379	(AE000627) ABC transporter, ATP-binding protein (yhcg) [Helicobacter pylori]	66	40	447
32	1	199	984	gi 312444	ORF2 [Bacillus caldolyticus]	66	49	786
33	13	8352	7234	gi 1387979	44% identity over 302 residues with hypothetical protein from Synechocystis sp. accession D64006.CD; expression induced by environmental stress; some similarity to glycosyl transferases; two potential membrane-spanning helices [Bacillus subtilis]	66	44	1119
34	6	5658	4708	gnl PID e250724	orf2 [Lactobacillus sake]	66	39	951
34	14	9792	9574	gi 1590997	M. Jannaschii predicted coding region MJ0272 [Methanococcus jannaschii]	66	48	219
35	16	15163	14501	gi 1773352	cap5M [Staphylococcus aureus]	66	46	663
36	9	6173	6976	gi 1518680	minicell-associated protein DivIVA [Bacillus subtilis]	66	35	804
36	11	10396	10824	bbs 155344	insulin activator factor, INSAP [human, Pancreatic insulinoma, Peptide Partial, 744 aa] [Homo sapiens]	66	43	429
48	1	28	1419	gnl PID e325204	hypothetical protein [Bacillus subtilis]	66	50	1392
48	7	3810	4112	gi 2182574	(AE000090) Y4pE [Rhizobium sp. NGR234]	66	40	303
52	4	3595	2789	gi 388565	major cell-binding factor [Campylobacter jejuni]	66	52	807
54	3	2662	1076	gnl PID d101831	glutamine-binding periplasmic protein [Synechocystis sp.]	66	43	1587
61	10	9740	9183	gnl PID e154144	mdr gene product [Staphylococcus aureus]	66	44	558
72	13	10893	11993	gi 2313129	(AE000526) H. pylori predicted coding region HP0049 [Helicobacter pylori]	66	44	1101
74	9	13267	12476	gi 1573941	hypothetical [Haemophilus influenzae]	66	43	792
75	1	2	868	gi 1574631	nicotinamide mononucleotide transporter (pnuC) [Haemophilus influenzae]	66	48	867
75	7	5303	4275	gi 41312	(put. EBG repressor protein [Escherichia coli])	66	40	1029

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
82	7	6813	8123	gnl PID e255128	trigger factor [Bacillus subtilis]	66	53	1311
83	3	905	1219	pir C33496 C334	hisc homolog - Bacillus subtilis	66	44	315
86	10	9407	8925	gi 683584	shikimate kinase [Lactococcus lactis]	66	41	483
88	10	7001	6060	gi 2098719	putative fibrillar-associated protein [Actinomyces naeslundii]	66	52	942
89	1	951	4	gi 410118	ORFX19 [Bacillus subtilis]	66	41	948
93	7	3661	2711	gi 1787936	(AE000260) f298; This 298 aa orf is 51 pct identical (5 gaps) to 297 residues of an approx. 304 aa protein YCSN_BACSU SW: R42972 [Escherichia coli]	66	49	951
104	3	1805	3049	gi 1469784	putative cell division protein ftsW [Enterococcus hirae]	66	48	1245
106	14	13576	14253	gi 40027	homologous to E.coli gidB [Bacillus subtilis]	66	52	678
107	3	965	1864	gi 144858	ORF A [Clostridium perfringens]	66	49	900
112	7	5718	6593	gi 609332	DprA [Haemophilus influenzae]	66	43	876
115	1	3	302	gi 727367	MyrIP [Saccharomyces cerevisiae]	66	56	300
122	1	3	566	gnl PID d101328	YqjY [Bacillus subtilis]	66	36	564
126	8	11759	11046	gnl PID d101163	ORF3 [Bacillus subtilis]	66	48	714
128	11	8201	8431	gi 726288	growth associated protein GAP-43 [Xenopus laevis]	66	41	231
131	8	4894	4508	gi 486661	THm related protein [Saccharomyces cerevisiae]	66	39	387
140	3	3236	2574	gi 40056	phoP gene product [Bacillus subtilis]	66	36	663
140	15	16318	15434	gi 1658189	5.10-methylenetetrahydrofolate reductase [Erwinia carotovora]	66	48	885
146	12	7926	7636	gnl PID d101140	transposase [Synecocystis sp.]	66	42	291
147	6	7137	6154	gi 472326	TPP-dependent acetoin dehydrogenase alpha-subunit [Clostridium magnum]	66	48	984
149	6	4435	5430	gnl PID d101887	pentose-5-phosphate-3-epimerase [Synecocystis sp.]	66	46	996
149	13	10754	11575	gi 42371	pyruvate formate-lyase activating enzyme (AA 1-246) [Escherichia coli]	66	42	822
186	4	2578	2270	gnl PID d101199	ORF11 [Enterococcus faecalis]	66	41	309
207	2	2340	2597	gnl PID e321893	envelope glycoprotein gp160 [Human immunodeficiency virus type 1]	66	46	258
210	7	3358	3678	gi 49318	ORF4 gene product [Bacillus subtilis]	66	46	321
217	8	5143	5355	gi 49538	thrombin receptor [Cricketulus longicaudatus]	66	38	213
220	4	3875	3642	gi 466648	alternate name ORF4 of L23635 [Escherichia coli]	66	33	234

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
223	1	1070	138	gnl PID e247187	zinc finger protein [Bacteriophage phigle]	66	45	933
224	2	1864	2640	gi 1176399	putative ABC transporter subunit [Staphylococcus epidermidis]	66	41	777
243	1	3	872	dbj AB000617.2	[AB000617] YcdH [Bacillus subtilis]	66	45	870
268	2	891	568	gi 517210	putative transposase [Streptococcus pyogenes]	66	60	324
322	1	2	643	gi 1499836	Zn protease [Methanococcus jannaschii]	66	40	642
5	10	13909	13178	gi 1574292	hypothetical [Haemophilus influenzae]	65	34	732
6	11	10465	11190	gi 142854	homologous to E. coli radC gene product and to unidentified protein from Staphylococcus aureus [Bacillus subtilis]	65	48	726
7	2	647	405	pir C64146 C641	hypothetical protein HI0259 - Haemophilus influenzae (strain Rd KW20)	65	42	243
7	7	6246	6821	gnl PID d101323	Yqhu [Bacillus subtilis]	65	50	576
10	2	1873	1397	gi 1163111	ORF-1 [Streptococcus pneumoniae]	65	54	477
16	3	1428	2222	gnl PID e325010	hypothetical protein [Bacillus subtilis]	65	45	795
21	4	3815	3357	gnl PID e314910	hypothetical protein [Staphylococcus sciuri]	65	40	459
22	34	25776	26384	gi 1123030	CpxA [Actinobacillus pleuropneumoniae]	65	42	609
43	2	1648	290	gi 1044826	F14E5.1 [Caenorhabditis elegans]	65	38	1359
48	13	10062	10856	gi 1573390	hypothetical [Haemophilus influenzae]	65	45	795
48	22	17521	16883	gi 1573391	hypothetical [Haemophilus influenzae]	65	37	639
48	25	19027	18533	gnl PID e264484	YCR020c, len:215 [Saccharomyces cerevisiae]	65	38	495
49	3	3856	5334	gi 1480429	putative transcriptional regulator [Bacillus stearothermophilus]	65	32	1479
50	6	5337	4519	gi 171963	tRNA isopentenyl transferase [Saccharomyces cerevisiae]	65	42	819
52	15	14728	15588	gi 1499745	M. jannaschii predicted coding region MJ0912 [Methanococcus jannaschii]	65	46	861
59	7	3963	4745	gi 496514	orf zeta [Streptococcus pyogenes]	65	42	783
68	3	2500	3483	gi 887824	ORF_o310 [Escherichia coli]	65	46	984
69	3	2171	1077	gnl PID e311453	unknown [Bacillus subtilis]	65	42	1095
69	7	6029	5325	gi 809660	deoxyribose-phosphate aldolase [Bacillus subtilis]	65	55	705
71	5	8536	9783	gi 1573324	glycosyl transferase lgtC (GP:U14554_4) [Haemophilus influenzae]	65	42	1248
72	8	7664	8527	gnl PID e267589	Unknown, highly similar to several spermidine synthases [Bacillus subtilis]	65	39	864

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
76	5	5773	4097	gnl PID d101723	DNA REPAIR PROTEIN REC N (RECOMBINATION PROTEIN N). [Escherichia coli]	65	44	1677
76	9	8099	7875	gi 1574276	exodeoxyribonuclease, small subunit (xseB) [Haemophilus influenzae]	65	38	225
84	2	2870	2352	gi 2313188	(AE000532) conserved hypothetical protein [Helicobacter pylori]	65	41	519
86	15	14495	13407	gnl PID d101880	3-dehydroquininate synthase [Synecocystis sp.]	65	44	1089
87	3	3706	2423	gi 151259	HMG-CoA reductase (EC 1.1.1.88) [Pseudomonas mevalonii]	65	51	1284
88	3	2425	2736	gi 1098510	unknown [Lactococcus lactis]	65	30	312
89	2	1627	1007	gnl PID d102008	(AB001488) SIMILAR TO ORF14 OF ENTEROCOCCUS FAECALIS TRANSPOSON TN916. [Bacillus subtilis]	65	41	621
111	6	6635	6186	gnl PID e246063	NM23/nucleoside diphosphate kinase [Xenopus laevis]	65	50	450
116	1	3	1016	gnl PID d101125	queuosine biosynthesis protein QueA [Synecocystis sp.]	65	44	1014
123	1	69	389	gi 498839	ORE2 [Clostridium perfringens]	65	36	321
123	7	6522	7190	gi 1575577	DNA-binding response regulator [Thermotoga maritima]	65	39	669
125	3	3821	2859	gnl PID e257609	sugar-binding transport protein [Anaerococcus thermophilum]	65	47	963
137	12	8015	7818	gi 2182574	(AE000090) Y4Pe [Rhizobium sp. NGR234]	65	41	198
147	4	5021	3885	gi 472329	dlhydrolypoamide acetyltransferase [Clostridium magnum]	65	47	1137
148	2	1053	1931	gnl PID d101319	YqgH [Bacillus subtilis]	65	42	879
151	2	3212	4687	gi 304897	EcoE type I restriction modification enzyme H subunit [Escherichia coli]	65	50	1476
156	2	730	437	gi 310893	membrane protein [Theileria parva]	65	47	294
164	7	4256	4837	gi 410132	ORFX8 [Bacillus subtilis]	65	48	582
169	6	3192	3914	gi 1532737	similar to purine nucleoside phosphorylase (deoD) [Escherichia coli]	65	41	723
176	4	2951	2220	gnl PID e339500	oligopeptide binding lipoprotein [Streptococcus pneumoniae]	65	43	732
195	4	4556	3900	gi 1592142	ABC transporter, probable ATP-binding subunit [Methanococcus jannaschii]	65	40	657
196	1	160	1572	gnl PID d102004	(AB001488) PROBABLE UDP-N-ACETYLURACILOYL-L-GLUTAMYL-2, 6-DIAMINOLIGASE (EC 6.3.2.15). [Bacillus subtilis]	65	51	1413
204	2	2246	1215	gi 143156	membrane bound protein [Bacillus subtilis]	65	37	1032
210	4	1544	1891	gi 49315	ORF1 gene product [Bacillus subtilis]	65	48	348
242	2	1625	723	gi 1787540	(AE000226) f249; This 249 aa orf is 32 pct identical (8 gaps) to 244 residues of an approx. 272 aa protein AGAR_ECOLI SW: P42902 [Escherichia coli]	65	42	903

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
284	1	1	900	gi 559861	clmY (Plasmid pAD1)	65	36	900
304	1	2	574	gnl PID e290934	unknown [Mycobacterium tuberculosis]	65	52	573
315	1	2	1483	gi 790694	mannuronan C-5-epimerase [Azotobacter vinelandii]	65	57	1482
320	1	3	569	gnl PID d102048	K. aerogenes, histidine utilization repressor; P12380 (199) DNA binding [Bacillus subtilis]	65	46	567
358	1	1	309	gnl PID e323508	YloS protein [Bacillus subtilis]	65	55	309
2	7	7571	6696	gi 1498753	nicotinate-nucleotide pyrophosphorylase [Rhodospirillum rubrum]	64	47	876
6	6	5924	6802	gnl PID d101111	methionine aminopeptidase [Synecocystis sp.]	64	52	879
8	4	3417	3686	gi 1045935	DNA helicase II [Mycoplasma genitalium]	64	58	270
11	4	3249	2689	gnl PID e265529	OrfB [Streptococcus pneumoniae]	64	46	561
15	7	6504	7145	gi 1762328	Vcr59c/VigZ homolog [Bacillus subtilis]	64	45	642
22	11	9548	9895	gnl PID d100581	unknown [Bacillus subtilis]	64	38	348
22	30	22503	23174	gi 289260	comE ORF1 [Bacillus subtilis]	64	44	672
26	7	14375	14199	gi 409286	BarU [Bacillus subtilis]	64	30	177
27	2	1510	1334	gi 40795	odeI methylase [Desulfovibrio vulgaris]	64	51	177
29	2	614	297	gi 2326168	type VII collagen [Mus musculus]	64	50	318
35	2	368	721	pir JC1151 JC11	hypothetical 20.3K protein (insertion sequence IS1131) - Agrobacterium tumefaciens (strain P022) plasmid Ti	64	50	354
40	1	3	449	gi 46970	epiD gene product [Staphylococcus epidermidis]	64	41	447
40	7	4683	4976	gnl PID e325792	[AJ000005] glucose kinase [Bacillus megaterium]	64	45	294
45	7	8068	6920	gnl PID d102036	subunit of ADP-glucose pyrophosphorylase [Bacillus stearothermophilus]	64	40	1149
51	2	301	1059	gi 43985	nifs-like gene [Lactobacillus delbrueckii]	64	54	759
51	13	15251	18397	gi 2293260	[AF008220] DNA-polymerase III alpha-chain [Bacillus subtilis]	64	46	3147
53	3	1157	555	gi 1574292	hypothetical [Haemophilus influenzae]	64	47	603
58	2	4236	1606	gi 1573826	alanyl-tRNA synthetase (alaS) [Haemophilus influenzae]	64	51	2631
66	1	3	1259	gi 895749	putative cellobiose phosphotransferase enzyme II' [Bacillus subtilis]	64	42	1257
68	5	5213	6556	gi 436965	[maIA] gene products [Bacillus stearothermophilus]	64	47	1344
69	6	5356	4949	gnl PID d101316	Cdd [Bacillus subtilis]	64	52	408

TABLE 2
S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
74	4	6948	5038	gi 726480	L-glutamine-D-fructose-6-phosphate amidotransferase [Bacillus subtilis]	64	50	1911
75	3	1283	1465	bbs 133379	TLS-CHOP=fusion protein(CHOP=C/EBP transcription factor, TLS=nuclear RNA-binding protein) [human, myxoid liposarcoma cells, Peptide Mutant, 462 aa] [Homo sapiens]	64	57	183
81	13	14016	14231	gi 143175	methanol dehydrogenase alpha-10 subunit [Bacillus sp.]	64	35	216
83	22	21851	22090	gnl PID d101315	YqfA [Bacillus subtilis]	64	44	240
87	11	10046	9300	gnl PID e323505	putative Ptc1 protein [Bacillus subtilis]	64	43	747
98	7	5032	5706	gnl PID e233880	hypothetical protein [Bacillus subtilis]	64	38	675
105	1	2	1276	gi 1657503	similar to <i>S. aureus</i> mercury(II) reductase [Escherichia coli]	64	45	1275
113	7	5136	6410	gnl PID d101119	Nifs [Synechocystis sp.]	64	50	1275
119	1	2	1297	gnl PID e320520	hypothetical protein [Natronobacterium pharaonis]	64	37	1296
123	3	1125	2156	gnl PID e253284	ORF YDL244w [Saccharomyces cerevisiae]	64	40	1032
124	5	2331	1780	gnl PID d101884	hypothetical protein [Synechocystis sp.]	64	50	552
129	4	3467	2709	gnl PID d101314	YqeU [Bacillus subtilis]	64	52	759
131	1	152	3	gi 1377841	unknown [Bacillus subtilis]	64	42	150
137	11	7196	7549	pir JC1151 JC11	hypothetical 20.3K protein (insertion sequence IS1131) - Agrobacterium tumefaciens (strain P022) plasmid T1	64	50	354
139	3	3226	2651	gi 2293301	(AF008220) YtqB [Bacillus subtilis]	64	44	576
146	10	6730	5648	gi 1322245	mevalonate pyrophosphate decarboxylase [Rattus norvegicus]	64	45	1083
147	1	2	1018	gnl PID e137033	unknown gene product [Lactobacillus leichmannii]	64	46	1017
148	11	8430	8783	gi 2130630	(AF000430) dynamin-like protein [Homo sapiens]	64	28	354
156	7	4313	3612	gnl PID d102050	transmembrane [Bacillus subtilis]	64	31	702
157	4	1299	2114	gnl PID d100892	homologous to Gln transport system permease proteins [Bacillus subtilis]	64	43	816
162	6	5880	6362	gi 517204	ORF1, putative 42 kDa protein [Streptococcus pyogenes]	64	58	483
164	13	9707	8769	gnl PID d100964	homologue of ferric anquibactin transport system permease protein FatD of <i>V. anguillarum</i> [Bacillus subtilis]	64	40	939
175	5	3906	4598	gi 534045	antiterminator [Bacillus subtilis]	64	39	693
189	10	6154	6507	gi 581307	response regulator [Lactobacillus plantarum]	64	33	354
191	4	3519	2863	gi 149520	phosphoribosyl anthranilate isomerase [Lactococcus lactis]	64	46	657

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins Y₁ similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
202	1	76	1140	gnl PID e293806	O-acetylhomoserine sulphydrylase [Leptospira meyeri]	64	47	1065
224	1	234	1571	gi 1573393	collagenase (prtC) [Haemophilus influenzae]	64	42	1338
231	3	291	647	gi 40174	ORF X [Bacillus subtilis]	64	43	357
253	3	709	1089	pir JC1151 JC11	hypothetical 20.3K protein (insertion sequence IS1131) - Agrobacterium tumefaciens (strain P022) plasmid Ti	64	50	381
265	1	820	2	gi 1377832	unknown [Bacillus subtilis]	64	31	819
297	1	1	660	gi 1590871	collagenase [Methanococcus jannaschii]	64	48	660
328	1	263	21	gi 992651	Gln4p [Saccharomyces cerevisiae]	64	41	243
5	4	8730	8098	gi 556885	unknown [Bacillus subtilis]	63	48	633
10	6	5178	4483	gi 1573101	hypothetical [Haemophilus influenzae]	63	40	696
12	11	9324	9902	gi 806536	membrane protein [Bacillus acidopulluliticus]	63	42	579
15	10	8897	9187	gi 722339	unknown [Acetobacter xylinum]	63	40	291
17	2	1031	309	gnl PID e217602	PlnU [Lactobacillus plantarum]	63	32	723
18	8	7778	5975	gi 1377843	unknown [Bacillus subtilis]	63	45	804
26	4	9780	7078	gi 142440	ATP-dependent nuclease [Bacillus subtilis]	63	46	2703
29	5	3488	4192	gi 1377829	unknown [Bacillus subtilis]	63	35	705
34	11	8830	7988	gnl PID d101198	ORF8 [Enterococcus faecalis]	63	45	843
35	3	1187	876	gi 722339	unknown [Acetobacter xylinum]	63	39	312
48	15	12509	11691	gi 1573389	hypothetical [Haemophilus influenzae]	63	41	819
51	11	12719	12189	gi 142450	ahrC protein [Bacillus subtilis]	63	35	531
55	4	3979	5022	gi 1708640	YeaB [Bacillus subtilis]	63	41	1044
55	15	13669	14670	gnl PID e311502	thioredoxine reductase [Bacillus subtilis]	63	44	1002
68	10	9242	8919	sp P37686 Y1AY_	HYPOTHETICAL 40.2 KD PROTEIN IN AVTA-SELB INTERGENIC REGION (F382)	63	40	324
86	7	6554	5685	gi 1574382	lic-1 operon protein (licD) [Haemophilus influenzae]	63	41	870
88	8	6085	5180	gi 2098719	putative fibrillar-associated protein [Actinomyces naeslundii]	63	43	906
96	8	5858	6484	gi 1052803	orfIyrb gene product [Streptococcus pneumoniae]	63	38	627
100	1	240	1940	gi 7171	fucosidase [Dictyostelium discoideum]	63	36	1701

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
104	4	3063	5765	gi 144985	phosphoenolpyruvate carboxylase (Corynebacterium glutamicum)	63	46	2703
106	8	9189	8554	gi 533099	endonuclease III (Bacillus subtilis)	63	45	636
122	6	4704	4886	gnl PID d101139	transposase (Synechocystis sp.)	63	39	183
128	7	4517	5203	gnl PID d101434	orf2 (Methanobacterium thermoautotrophicum)	63	50	687
137	4	963	1547	gi 472920	v-type Na-ATPase (Enterococcus hirae)	63	27	585
142	7	4100	4585	gnl PID e313025	hypothetical protein (Bacillus subtilis)	63	44	486
159	5	1741	2571	gi 1787043	(AE000184) f271; This 271 aa orf is 24 pct identical (16 gaps) to 265 residues of an approx. 272 aa protein YIDA_ECOLI SM: P09997 (Escherichia coli)	63	39	831
171	12	8803	14406	gnl PID e324918	IgA1 protease (Streptococcus sanguis)	63	48	5604
177	1	3	347	gi 1773150	hypothetical 14.8kd protein (Escherichia coli)	63	34	345
178	2	423	917	gi 722339	unknown (Acetobacter xylinum)	63	41	495
178	3	794	1012	gi 1591582	cobalamin biosynthesis protein N (Methanococcus jannaschii)	63	36	219
195	1	1377	175	gnl PID e324217	ftsQ (Enterococcus hirae)	63	33	1203
234	5	1739	1527	gi 1591582	cobalamin biosynthesis protein N (Methanococcus jannaschii)	63	36	213
249	1	81	257	gi 1000453	TreR (Bacillus subtilis)	63	41	177
283	1	127	1347	gi 396486	ORF8 (Bacillus subtilis)	63	44	1221
293	3	2804	3466	gi 722339	unknown (Acetobacter xylinum)	63	37	663
311	1	905	486	gi 1877424	UDP-galactose 4-epimerase (Streptococcus mutans)	63	46	420
324	1	2	556	gi 1477741	histidine periplasmic binding protein P29 (Campylobacter jejuni)	63	36	555
365	1	219	13	gi 2252843	(AF013293) No definition line found (Arabidopsis thaliana)	63	33	207
382	1	88	378	gi 722339	unknown (Acetobacter xylinum)	63	40	291
385	3	364	158	gi 2252843	(AF013293) No definition line found (Arabidopsis thaliana)	63	33	207
2	1	2495	288	gnl PID e325007	penicillin-binding protein (Bacillus subtilis)	62	42	2208
3	23	23374	24231	gnl PID e254993	hypothetical protein (Bacillus subtilis)	62	35	858
6	16	14320	13193	gnl PID e349614	nifs-like protein (Mycobacterium leprae)	62	37	1128
7	8	6819	7232	gnl PID d101324	Yqnr (Bacillus subtilis)	62	32	414
7	19	15466	14207	gnl PID d101804	beta ketoacyl-acyl carrier protein synthase (Synechocystis sp.)	62	43	1260

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
7	21	17155	16229	gnl PID e333514	putative FabD protein [Bacillus subtilis]	62	46	927
7	24	19526	18519	gi 1276434	beta-ketoacyl-ACP synthase III [Cuphea wrightii]	62	37	1008
12	7	5904	4702	gi 1573768	A/G-specific adenine glycosylase (muty) [Haemophilus influenzae]	62	43	1203
12	9	8032	8793	gi 1591587	pantothenate metabolism flavoprotein [Methanococcus jannaschii]	62	33	762
15	11	9678	9328	pir JC1151 JC11	hypothetical 20.3K protein (insertion sequence IS1131) - Agrobacterium tumefaciens (strain P022) plasmid T1	62	43	351
17	4	2609	2442	gi 1591081	M. jannaschii predicted coding region MJ0374 [Methanococcus jannaschii]	62	43	168
17	5	3053	2835	gi 149570	role in the expression of lactacin F, part of the laf operon [Lactobacillus sp.]	62	44	219
22	10	8627	9538	gnl PID d100580	similar to B. subtilis DnaH [Bacillus subtilis]	62	43	912
30	3	865	2043	gi 2314379	(AE000627) ABC transporter, ATP-binding protein (yhcg) [Helicobacter pylori]	62	43	1179
33	5	2235	1636	gi 113976	ipa-52r gene product [Bacillus subtilis]	62	44	600
38	11	5689	6123	gi 148231	o251 [Escherichia coli]	62	34	435
40	17	14272	13328	gnl PID d101904	hypothetical protein [Synechocystis sp.]	62	43	945
42	1	3	311	gi 1146182	putative [Bacillus subtilis]	62	41	309
44	2	1267	4005	gi 1786952	(AE000176) o877; 100 pct identical to the first 86 residues of the 100 aa hypothetical protein fragment YBGB_ECOLI SM: P54746 [Escherichia coli]	62	43	2739
48	12	9732	9304	gi 662920	repressor protein [Enterococcus hirae]	62	32	429
51	8	5664	7181	gnl PID e301153	StySKI methylase [Salmonella enterica]	62	44	1518
52	3	2791	2099	gi 1183886	integral membrane protein [Bacillus subtilis]	62	41	693
55	16	15702	14704	gnl PID e313028	hypothetical protein [Bacillus subtilis]	62	40	999
59	6	3418	3984	gi 2065483	unknown [Lactococcus lactis lactis]	62	32	567
63	5	4997	4809	gi 149771	pinin gene inverting protein (pivHL) [Moraxella lacunata]	62	28	189
70	14	10002	10739	gi 992977	bplG gene product [Bordetella pertussis]	62	45	738
71	13	18790	20382	gi 1280135	coded for by C. elegans cDNA cm2166; coded for by C. elegans cDNA cm0162; similar to melibiose carrier protein (thiomethylgalactoside permease II) [Caenorhabditis elegans]	62	62	1593
71	28	32217	32768	gnl PID d101312	YqeG [Bacillus subtilis]	62	35	552
74	7	11666	10383	gi 1552753	hypothetical [Escherichia coli]	62	38	1284

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
80	8	9370	9609	gnl PID d102002	(AB001488) FUNCTION UNKNOWN. [Bacillus subtilis]	62	46	240
97	10	9068	7041	gi 882463	protein-N(p1)-phosphohistidine-sugar phosphotransferase [Escherichia coli]	62	42	2028
98	4	2306	3268	gnl PID d101496	braE (integral membrane protein) [Pseudomonas aeruginosa]	62	42	963
102	3	2823	3539	gnl PID e313010	hypothetical protein [Bacillus subtilis]	62	24	717
103	3	2795	1242	gnl PID d102049	H. influenzae hypothetical ABC transporter; P44808 (974) [Bacillus subtilis]	62	41	1554
111	2	2035	3462	gi 581297	MisP [Lactococcus lactis]	62	44	1428
112	4	3154	4080	gi 1574379	lic-1 operon protein (licA) [Haemophilus influenzae]	62	39	927
112	6	4939	5649	gi 1574381	lic-1 operon protein (licC) [Haemophilus influenzae]	62	39	711
124	3	1137	721	gi 1573024	anaerobic ribonucleoside-triphosphate reductase (nrpD) [Haemophilus influenzae]	62	45	417
124	6	3162	2329	gi 609076	leucyl aminopeptidase [Lactobacillus delbrueckii]	62	40	834
126	7	11073	7516	gnl PID d101163	ORF4 [Bacillus subtilis]	62	38	3558
129	6	4983	4540	pir S41509 S415	zinc finger protein EF6 - Chilo iridescent virus	62	48	444
131	7	4510	4103	gi 1857245	unknown [Lactococcus lactis]	62	42	408
149	2	1923	2579	gi 1592142	ABC transporter, probable ATP-binding subunit [Methanococcus jannaschii]	62	41	657
149	7	5360	6055	gnl PID e323508	VloS protein [Bacillus subtilis]	62	40	696
156	1	450	238	gnl PID e254644	membrane protein [Streptococcus pneumoniae]	62	40	213
156	6	3606	2935	gnl PID d102050	transmembrane [Bacillus subtilis]	62	37	672
171	2	1779	2291	gi 43941	EIII-B Sor PTS [Klebsiella pneumoniae]	62	35	513
172	2	385	723	gi 895750	putative cellobiose phosphotransferase enzyme III [Bacillus subtilis]	62	39	339
173	3	2599	893	gi 1591732	cobalt transport ATP-binding protein O [Methanococcus jannaschii]	62	42	1707
179	2	492	1754	gi 1574071	H. influenzae predicted coding region H11038 [Haemophilus influenzae]	62	38	1263
181	6	2856	3707	gi 1777435	Lact [Lactobacillus casei]	62	42	852
185	2	2074	311	gi 2182197	(AE000073) Y4FN [Rhizobium sp. NGR234]	62	41	1764
200	2	1061	1984	gi 450566	transmembrane protein [Bacillus subtilis]	62	37	924
202	3	2583	3473	gi 42219	P35 gene product (AA 1 - 314) [Escherichia coli]	62	41	891
210	3	1374	1565	gi 49315	ORF1 gene product [Bacillus subtilis]	62	45	192

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
211	1	3	971	gi 147402	mannose permease subunit III-Man [Escherichia coli]	62	43	969
223	2	1495	1034	gnl PID d101190	ORF2 [Streptococcus mutans]	62	41	462
228	1	34	909	gi 530063	glycerol uptake facilitator [Streptococcus pneumoniae]	62	44	876
234	2	90	917	gi 2293259	(AF008220) Ytqi [Bacillus subtilis]	62	38	828
282	5	1765	1487	gnl PID e276475	galactokinase [Arabidopsis thaliana]	62	33	279
375	1	1	159	gi 1674231	(AE000052) Mycoplasma pneumoniae, hypothetical protein homolog; similar to Swiss-Prot Accession Number P35155, from B. subtilis [Mycoplasma pneumoniae]	62	40	159
385	5	584	357	gi 1573353	outer membrane integrity protein (tolA) [Haemophilus influenzae]	62	47	228
3	19	118550	19269	gi 606162	ORF_f229 [Escherichia coli]	61	41	720
7	4	2725	3225	gi 2114425	similar to Synecocystis sp. hypothetical protein, encoded by GenBank Accession Number D64006 [Bacillus subtilis]	61	42	501
17	6	3326	3054	gi 149569	lactacin F [Lactobacillus sp.]	61	43	273
44	3	4061	4957	gnl PID d101068	xylose repressor [Synecocystis sp.]	61	38	897
54	11	8388	7234	gnl PID d101329	YqjH [Bacillus subtilis]	61	42	1155
57	6	3974	6037	gnl PID d101316	YqfK [Bacillus subtilis]	61	42	2064
58	5	7356	6565	sp P45169 POTC_	SPERMIDINE/PUTRESCINE TRANSPORT SYSTEM PERMEASE PROTEIN POTC.	61	34	792
67	1	3	692	gi 537108	ORF_f254 [Escherichia coli]	61	46	690
68	9	8816	7890	gi 19501	pPL212 gene product (AA 1-184) [Lupinus polyphyllus]	61	41	927
70	15	10737	12008	gi 992976	bplF gene product [Bordetella pertussis]	61	44	1272
72	11	9759	10202	gnl PID d101833	carboxymorspermidine decarboxylase [Synecocystis sp.]	61	36	444
76	8	7881	7003	gnl PID d100305	farnesyl diphosphate synthase [Bacillus stearothermophilus]	61	45	879
87	4	4914	3697	gi 528991	unknown [Bacillus subtilis]	61	42	1218
87	13	12311	11361	gi 1789683	(AE000407) methionyl-tRNA formyltransferase [Escherichia coli]	61	44	951
91	2	731	2989	gi 537080	ribonucleoside triphosphate reductase [Escherichia coli]	61	45	2259
105	3	2711	3499	gnl PID d101851	hypothetical protein [Synecocystis sp.]	61	44	789
115	6	7968	6478	gi 895747	putative cel operon regulator [Bacillus subtilis]	61	36	1491
123	8	7181	8518	gi 1209527	protein histidine kinase [Enterococcus faecalis]	61	40	1338

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
126	6	7525	6725	gi 1787043	(AE000184) f271; This 271 aa orf is 24 pct identical (16 gaps) to 265 residues of an approx. 272 aa protein YIDA_ECOLI SW: P09997 [Escherichia coli]	61	38	801
128	1	1	639	gnl PID d101328	YqiY [Bacillus subtilis]	61	41	639
139	7	4794	5054	gi 1022726	unknown [Staphylococcus haemolyticus]	61	41	261
139	9	12632	5913	gnl PID e270014	beta-galactosidase [Thermotoga thermophilus]	61	41	6720
143	1	2552	42	gi 520541	penicillin-binding proteins 1A and 1B [Bacillus subtilis]	61	42	2511
148	16	12125	11424	gi 1552743	tetrahydrodipicolinate N-succinyltransferase [Escherichia coli]	61	42	702
162	3	4112	3456	gnl PID d101829	phosphoglycolate phosphatase [Synechocystis sp.]	61	30	657
172	3	727	1077	gnl PID d102048	B. subtilis, cellobiose phosphotransferase system, ceaA; P46318 (220) [Bacillus subtilis]	61	44	351
177	3	1101	1772	gnl PID d100574	unknown [Bacillus subtilis]	61	43	672
202	2	1278	2595	gi 1045831	hypothetical protein (GB:L18965_6) [Mycoplasma genitalium]	61	36	1308
224	3	2782	3144	gi 1591144	M. jannaschii predicted coding region M30440 [Methanococcus jannaschii]	61	30	363
225	4	3395	3766	gi 1552774	hypothetical [Escherichia coli]	61	40	372
249	2	212	802	gi 1000453	Trer [Bacillus subtilis]	61	42	591
254	2	843	484	gnl PID d100417	ORF120 [Escherichia coli]	61	36	360
257	1	3	350	gnl PID e255315	unknown [Mycobacterium tuberculosis]	61	42	348
293	4	3971	3657	pir JC1151 JC11	hypothetical 20.3K protein (insertion sequence IS1131) - Agrobacterium tumefaciens (strain P022) plasmid T1	61	45	315
301	1	949	17	gi 2291209	(AF016424) contains similarity to acyltransferases (Caenorhabditis elegans)	61	33	933
373	1	1066	287	gi 393396	Tb-292 membrane associated protein [Trypanosoma brucei subgroup]	61	38	780
3	24	24473	24955	gi 537093	ORF_c153b [Escherichia coli]	60	27	483
6	5	4636	5739	gi 2293258	(AF008320) YtoI [Bacillus subtilis]	60	35	1104
6	12	11936	11187	gi 293017	ORF3 (put.); putative [Lactococcus lactis]	60	44	750
17	13	6708	6484	gi 149569	lactacin F [Lactobacillus sp.]	60	32	225
18	7	6977	5670	gi 1788140	(AE000278) o481; This 481 aa orf is 35 pct identical (19 gaps) to 309 residues of an approx. 856 aa protein NOL1_HUMAN SW: P46087 [Escherichia coli]	60	43	1308
20	15	15878	17167	gnl PID d100584	unknown [Bacillus subtilis]	60	44	1290

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
22	1	1	243	gnl PID d102050	transmembrane [Bacillus subtilis]	60	36	243
32	10	8296	8964	gi 2293275	[AF008220] YtaG [Bacillus subtilis]	60	37	669
38	15	8837	9697	gi 40023	B. subtilis genes rpmH, rnpA, 50kd, gidA and gidB [Bacillus subtilis]	60	35	861
43	6	8610	5944	gi 171787	protein kinase 1 [Saccharomyces cerevisiae]	60	36	2667
44	1	1	1269	gnl PID e235823	unknown [Schizosaccharomyces pombe]	60	44	1269
45	10	11138	10368	gi 397488	1,4-alpha-glucan branching enzyme [Bacillus subtilis]	60	43	771
48	19	15766	14378	gnl PID e205173	orf1 [Lactobacillus helveticus]	60	39	1389
48	21	16727	16951	gnl PID d102041	unnamed protein product [Haemophilus actinomycetemcomitans]	60	32	225
50	1	2	898	gnl PID e246537	ORP286 protein [Pseudomonas stutzeri]	60	31	897
62	2	638	1177	gnl PID d100587	unknown [Bacillus subtilis]	60	42	540
68	4	3590	5203	gi 1573583	H. influenzae predicted coding region HI0594 [Haemophilus influenzae]	60	36	1614
70	11	5781	6182	gnl PID d102014	[AB001488] SIMILAR TO YDFR GENE PRODUCT OF THIS ENTRY (YDFR_BACSU) [Bacillus subtilis]	60	33	402
70	12	6343	8133	gnl PID e324970	hypothetical protein [Bacillus subtilis]	60	38	1791
71	8	11701	14157	gi 580866	ipa-12d gene product [Bacillus subtilis]	60	33	2457
74	8	12509	11664	gnl PID d101832	phosphatidate cytidyltransferase [Synecocystis sp.]	60	45	846
76	4	4116	3367	gi 2352096	orf; similar to serine/threonine protein phosphatase [Fervidobacterium islandicum]	60	39	750
80	4	7372	7665	gi 1786420	[AE000131] f86; 100 pct identical to GB: ECODINJ_6 ACCESSION: D38582 [Escherichia coli]	60	30	294
81	6	4073	4522	gi 147402	mannose permease subunit III-Man [Escherichia coli]	60	35	450
86	1	940	155	gi 143177	putative [Bacillus subtilis]	60	26	786
92	1	1	192	gi 396348	homoserine transsuccinylase [Escherichia coli]	60	45	192
93	14	10619	9384	gi 1788389	[AE000297] o864; This 464 aa orf is 33 pct identical (9 gaps) to 331 residues of an approx. 416 aa protein MTRC_NEIGO SW: P43505 [Escherichia coli]	60	27	1236
94	5	5548	8121	gnl PID e329895	cyclic nucleotide-gated channel beta subunit [Rattus norvegicus]	60	50	2574
97	7	5396	4533	gi 1591396	transketolase' [Methanococcus jannaschii]	60	43	864
102	2	2081	2833	gnl PID e320929	hypothetical protein [Mycobacterium tuberculosis]	60	43	753

TABLE 2 S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
106	9	9773	9183	gnl PID e334782	yibN protein [Bacillus subtilis]	60	31	591
113	8	6361	6837	gi 466875	infU; B1496_C1_157 [Mycobacterium leprae]	60	43	477
115	2	2755	524	gnl PID e328143	Glucosidase II [Homo sapiens]	60	32	2232
122	7	4763	5068	gnl PID d101876	transposase [Synechocystis sp.]	60	39	306
127	8	4510	5283	gi 1777938	Pgm [Treponema pallidum]	60	38	774
138	4	3082	2672	gnl PID e325196	hypothetical protein [Bacillus subtilis]	60	36	411
139	1	177	4	gnl PID d100680	ORF [Thermus thermophilus]	60	39	174
139	11	14520	13009	gi 537145	ORF_f437 [Escherichia coli]	60	30	1512
140	2	2592	1249	gi 1209527	protein histidine kinase (Enterococcus faecalis)	60	37	1344
141	1	210	1049	gi 463181	JES ORF from bp 3842 to 4081; putative [Human papillomavirus type 33]	60	34	840
141	5	5368	6405	gi 145362	tyrosine-sensitive DHP synthase (arop) [Escherichia coli]	60	41	1038
142	6	3558	4049	gi 600711	putative [Bacillus subtilis]	60	37	492
148	10	7742	8713	gnl PID e313022	hypothetical protein [Bacillus subtilis]	60	27	972
153	5	3667	4278	gi 2293322	(AF008220) branch-chain amino acid transporter [Bacillus subtilis]	60	42	612
155	1	1413	748	gi 2104504	putative UDP-glucose dehydrogenase [Escherichia coli]	60	40	666
158	3	3116	2472	gnl PID d100872	a negative regulator of pho regulon [Pseudomonas aeruginosa]	60	37	645
159	3	778	1386	gnl PID e308090	product highly similar to Bacillus anthracis CapA protein [Bacillus subtilis]	60	48	609
163	7	8049	8468	gnl PID d101313	ygeN [Bacillus subtilis]	60	38	420
170	3	4130	2688	gi 1574179	H. influenzae predicted coding region H1244 [Haemophilus influenzae]	60	39	1443
171	7	4717	5901	gi 606076	ORF_0384 [Escherichia coli]	60	44	1185
183	3	2440	2135	gi 1877427	repressor [Streptococcus pyogenes phage T12]	60	38	306
191	10	9444	8428	gi 415664	catabolite control protein [Bacillus megaterium]	60	42	1017
200	1	139	1083	gi 438462	transmembrane protein [Bacillus subtilis]	60	37	945
201	3	3895	1928	gi 475112	enzyme IIabc [pediococcus pentosaceus]	60	39	1968
214	15	10930	10439	gi 1573407	hypothetical [Haemophilus influenzae]	60	39	492
218	4	2145	2363	gi 608520	myosin heavy chain kinase A [Dictyostelium discoideum]	60	31	219

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
226	4	2518	2351	gi 437705	hyaluronidase [Streptococcus pneumoniae]	60	53	168
242	1	725	3	gi 43938	Sor regulator [Klebsiella pneumoniae]	60	41	723
245	1	1	288	gi 304897	EcoE type I restriction modification enzyme M subunit [Escherichia coli]	60	56	288
251	1	905	45	gi 671632	unknown [Staphylococcus aureus]	60	36	861
259	1	969	82	gi 153794	egg [Streptococcus gordonii]	60	32	888
260	2	1492	1662	pir S31840 S318	probable transposase - Bacillus stearothermophilus	60	26	171
274	1	836	96	gi 1592173	N-ethylmaleine chlorohydrolase [Methanococcus jannaschii]	60	40	741
308	1	463	2	gi 1787397	[AE000214] o157 [Escherichia coli]	60	43	462
318	1	3	308	gnl PID e137594	xerC recombinase [Lactobacillus leichmannii]	60	42	306
344	1	73	522	gi 509672	repressor protein [Bacteriophage Tuc2009]	60	32	450
5	1	576	4	gi 2293147	[AF008220] YtxM [Bacillus subtilis]	59	31	573
7	22	18140	17142	gnl PID e280724	unknown [Mycobacterium tuberculosis]	59	39	999
10	1	1413	4	gi 1353880	stallidase L [Macrobacteria decora]	59	41	1410
15	6	6463	5156	gi 580841	Fl [Bacillus subtilis]	59	35	1308
22	2	479	1393	gi 142469	als operon regulatory protein [Bacillus subtilis]	59	34	915
22	5	2698	4614	gnl PID e280623	PCPA [Streptococcus pneumoniae]	59	44	1917
30	1	208	558	gnl PID e233868	hypothetical protein [Bacillus subtilis]	59	37	351
30	4	3678	2455	gnl PID e202290	unknown [Lactobacillus sake]	59	33	1224
35	13	12201	11071	gnl PID e238664	hypothetical protein [Bacillus subtilis]	59	35	1131
35	14	13288	12182	gi 1657647	Cap8H [Staphylococcus aureus]	59	39	1107
36	18	18076	17897	gi 1500535	M. jannaschii predicted coding region MJ1635 [Methanococcus jannaschii]	59	33	180
38	12	6172	7137	gi 2293239	[AF008220] YtxK [Bacillus subtilis]	59	34	966
42	3	1952	3361	gi 1684845	pinin [Canis familiaris]	59	40	1410
50	3	2678	1728	gnl PID d101329	VqJK [Bacillus subtilis]	59	41	951
56	5	1870	2188	gnl PID e137594	xerC recombinase [Lactobacillus leichmannii]	59	41	519
61	6	6812	5628	gnl PID e311516	aminotransferase [Bacillus subtilis]	59	40	1185
67	5	2382	3023	gi 1146190	2-keto-3-deoxy-6-phosphogluconate aldolase [Bacillus subtilis]	59	36	642

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
69	10	8567	8899	gi 1573628	antothenate kinase (coaA) [Haemophilus influenzae]	59	38	333
87	12	11383	10055	gnl PID e323504	putative Fmu protein [Bacillus subtilis]	59	44	1329
113	14	13927	15894	gi 1673731	(AE000010) Mycoplasma pneumoniae, fructose-permease IIBC component; similar to Swiss-Prot Accession Number P20966, from E. coli [Mycoplasma pneumoniae]	59	43	1968
115	8	8766	8521	gi 1590886	M. jannaschii predicted coding region MJ0110 [Methanococcus jannaschii]	59	38	246
119	2	1966	1526	gnl PID e209005	homologous to ORF2 in nrDEF operons of E. coli and S. typhimurium [Lactococcus lactis]	59	43	441
128	17	13438	13178	gnl PID e279632	unknown [Mycobacterium tuberculosis]	59	38	261
140	22	23903	23388	gi 482922	protein with homology to pail repressor of B. subtilis [Lactobacillus delbrueckii]	59	40	516
148	13	9697	9014	gnl PID d102005	(AB001488) FUNCTION UNKNOWN, SIMILAR PRODUCT IN H. INFLUENZAE AND SYNECHOCYSTIS. [Bacillus subtilis]	59	32	684
149	10	7213	8244	gi 710422	cmp-binding-factor 1 [Staphylococcus aureus]	59	40	1032
164	9	6993	6013	gnl PID d100965	ferric anguibactin-binding protein precursor FatB of V. anguillarum [Bacillus subtilis]	59	41	981
164	12	8836	7823	gnl PID d100964	homologue of ferric anguibactin transport system permease protein FatC of V. anguillarum [Bacillus subtilis]	59	35	1014
177	2	401	1072	gi 289759	coded for by C. elegans cDNA CE2G3 (GenBank:Z14728); putative [Caenorhabditis elegans]	59	40	672
177	7	3841	4200	gi 2313445	(AE000551) H. pylori predicted coding region HP0342 [Helicobacter pylori]	59	38	360
183	4	2768	2508	gi 509672	repressor protein [Bacteriophage Tuc2009]	59	50	261
186	6	3398	2820	gi 606080	ORF_0290; Geneplot suggests frameshift linking to o267, not found [Escherichia coli]	59	38	579
190	3	3120	1711	gi 1613768	histidine protein kinase [Streptococcus pneumoniae]	59	32	1410
194	2	1621	1019	gnl PID d100579	unknown [Bacillus subtilis]	59	40	603
198	7	5205	4306	gnl PID e313073	hypothetical protein [Bacillus subtilis]	59	38	900
220	5	4362	3958	gnl PID d101322	YqH. [Bacillus subtilis]	59	46	405
242	3	1573	2367	gi 1787045	(AE000184) f308; This 308 aa orf is 35 pct identical (35 gaps) to 305 residues of an approx. 296 aa protein PFLC_ECOLI SW: P32675 [Escherichia coli]	59	42	795
247	2	1154	1480	gi 40073	ORF107 [Bacillus subtilis]	59	39	327

TABLE 2
S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
256	1	868	2	gnl PID d101924	hemolysin [Synecocystis sp.]	59	39	867
258	1	65	820	gi 2246532	ORF 73, contains large complex repeat CR 73 (Kaposi's sarcoma-associated herpesvirus)	59	20	756
270	1	386	1126	gnl PID d102092	YfNB [Bacillus subtilis]	59	40	741
281	1	552	166	gi 666062	putative [Lactococcus lactis]	59	31	387
309	1	3	479	gi 405879	yeiH [Escherichia coli]	59	38	477
363	1	2	1894	gi 915208	gastric mucin [Sus scrofa]	59	31	1893
387	2	425	84	gi 150671	S antigen precursor [Plasmodium falciparum]	59	44	342
5	6	1123	10465	gnl PID d101812	LumO [Synecocystis sp.]	58	29	759
29	4	2098	3513	gnl PID d100479	Na ⁺ -ATPase subunit J [Enterococcus hirae]	58	39	1416
30	5	4058	3651	gi 39478	ATP binding protein of transport ATPases [Bacillus firmus]	58	34	408
33	6	2983	2210	gnl PID d101164	unknown [Bacillus subtilis]	58	45	774
36	8	5316	6179	gi 1518679	orf [Bacillus subtilis]	58	32	864
43	5	5926	3971	gi 1788150	protease II [Escherichia coli]	58	37	1956
46	5	3704	5221	gnl PID e267329	Unknown [Bacillus subtilis]	58	42	1518
48	14	11722	11066	gnl PID d101771	thiamin biosynthetic bifunctional enzyme [Synecocystis sp.]	58	34	657
52	1	1229	3	gnl PID d101291	reductase [Pseudomonas aeruginosa]	58	35	1227
53	2	702	412	gi 2313357	(AE000545) cytochrome c biogenesis protein (ccda) [Helicobacter pylori]	58	25	291
58	4	6586	5498	gi 147329	transport protein [Escherichia coli]	58	41	1089
69	5	4934	3807	gnl PID e311492	unknown [Bacillus subtilis]	58	41	1128
71	27	31357	32277	gi 2408014	hypothetical protein [Schizosaccharomyces pombe]	58	33	921
72	4	3586	2882	gi 18694	nodulin-21 (AA 1-20); [Glycine max]	58	34	705
74	3	4937	4230	gi 2293252	(AF008220) YmoO [Bacillus subtilis]	58	33	708
79	4	4594	3422	gi 1217989	ORF3 [Streptococcus pneumoniae]	58	44	1173
82	8	10585	8171	gi 882711	exonuclease V alpha-subunit [Escherichia coli]	58	38	2415
86	17	16017	15337	gi 47642	5-dehydroquinase hydrolyase (3-dehydroquinase) [Salmonella typhi]	58	32	681
97	2	931	560	gi 153794	rgg [Streptococcus gordonii]	58	32	372

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
108	2	358	2724	gi1537020	vacB gene product [Escherichia coli]	58	37	2367
111	5	4593	5240	gi11592142	ABC transporter, probable ATP-binding subunit [Methanococcus jannaschii]	58	36	648
120	3	4421	5110	gnl PID d101320	vqgX [Bacillus subtilis]	58	47	690
128	16	13131	12673	gi1662919	ORF U [Enterococcus hirae]	58	42	459
132	3	6174	4939	gi11800301	macrolide-efflux determinant [Streptococcus pneumoniae]	58	35	1236
133	1	111	890	gnl PID e269488	Unknown [Bacillus subtilis]	58	36	780
160	11	8615	9865	gi1473901	ORF1 [Lactococcus lactis]	58	39	1251
161	6	6268	6849	gnl PID d101024	DJ-1 protein [Homo sapiens]	58	32	582
169	1	214	2	gnl PID d100447	translation elongation factor-3 [Chlorella virus]	58	31	213
187	1	487	2	gi1475114	regulatory protein [Pediococcus pentosaceus]	58	38	486
187	6	4384	4620	gi1167475	desiccation-related protein [Craterostigma plantagineum]	58	55	237
190	2	1464	1640	gnl PID e246727	competence pheromone [Streptococcus gordonii]	58	38	177
192	2	2012	1344	gnl PID d100556	rat GCP160 [Rattus rattus]	58	44	669
206	1	1292	696	gnl PID e202579	product similar to WrbA [Lactobacillus sake]	58	35	597
216	2	2333	555	gnl PID e325036	hypothetical protein [Bacillus subtilis]	58	33	1779
217	5	5250	4321	gi1466474	cellobiose phosphotransferase enzyme II'' [Bacillus stearothermophilus]	58	38	930
217	7	5636	5106	gnl PID d102048	B. subtilis cellobiose phosphotransferase system celB; P46317 (1998) transmembrane [Bacillus subtilis]	58	44	531
232	1	2	811	gi11573777	cell division ATP-binding protein (ftsE) [Haemophilus influenzae]	58	39	810
264	1	2	715	gi1973330	Nata [Bacillus subtilis]	58	32	714
280	1	33	767	gi11786187	(AE000111) hypothetical 29.6 kD protein in thrC-talB intergenic region [Escherichia coli]	58	31	735
306	1	845	3	gnl PID e334780	YibL protein [Bacillus subtilis]	58	47	843
360	3	1556	1092	sp P46351 Y2GD_	HYPOTHETICAL 45.4 KD PROTEIN IN THIAMINASE I 5' REGION.	58	32	465
363	5	2160	1867	gi1160671	S antigen precursor [Plasmodium falciparum]	58	51	294
372	1	806	3	gi1393394	Tb-291 membrane associated protein [Trypanosoma brucei subgroup]	58	37	804
382	2	749	519	pir JC1151 JC11	hypothetical 20.3K protein (insertion sequence IS1131) - Agrobacterium tumefaciens (strain P022) plasmid Ti	58	41	231

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
3	9	8409	7471	gi 1499745	M. jannaschii predicted coding region MJ0912 [Methanococcus jannaschii]	57	38	939
10	10	7674	7507	gi 1737169	homologue to SKP1 [Arabidopsis thaliana]	57	30	168
11	1	2	412	gnl PID d100139	ORF [Acetobacter pasteurianus]	57	42	411
31	4	2032	1388	gi 2293213	[AF008220] Ytpr [Bacillus subtilis]	57	37	645
33	11	6931	6449	gnl PID e324949	hypothetical protein [Bacillus subtilis]	57	36	483
45	5	5446	5060	gi 1592204	phosphoserine phosphatase [Methanococcus jannaschii]	57	44	387
49	7	6523	7632	gi 155369	PTS enzyme-II fructose [Xanthomonas campestris]	57	35	1110
52	6	4520	6850	gi 1574144	single-stranded-DNA-specific exonuclease (recJ) [Haemophilus influenzae]	57	35	2331
53	5	2079	1795	gi 184380	replicase-associated polypeptide [oat blue dwarf virus]	57	46	285
63	6	5312	4995	gi 2182608	[AE000094] Y4rJ [Rhizobium sp. NGR234]	57	39	318
72	15	13883	13059	gnl PID d100892	homologous to SwissProt:VDA, ECOLI hypothetical protein [Bacillus subtilis]	57	40	825
79	2	2561	1815	gnl PID d100965	homologue of NADPH-flavin oxidoreductase Fp of V. harvey [Bacillus subtilis]	57	44	747
82	9	9596	9763	gi 1206045	short region of similarity to glycerophosphoryl diester phosphodiesterases [Caenorhabditis elegans]	57	35	168
86	16	15371	14493	gi 1787983	[AE000264] o288: 92 pct identical (1 gaps) to 222 residues of fragment YDIB_ECOLI SW: P28244 (223 aa) [Escherichia coli]	57	34	879
93	3	1695	1177	gi 1500003	mutator mutr protein [Methanococcus jannaschii]	57	33	519
96	6	3026	4519	gi 559882	threonine synthase [Arabidopsis thaliana]	57	43	1494
99	14	17211	18212	gi 773349	BlrA protein [Bacillus subtilis]	57	44	1002
112	8	7448	7903	gi 1591393	M. jannaschii predicted coding region MJ0678 [Methanococcus jannaschii]	57	30	456
113	16	18627	18328	pir A45605 A456	mature-parasite-infected erythrocyte surface antigen MESA - Plasmodium falciparum	57	22	300
123	2	343	1110	pir F64149 F641	hypothetical protein H10355 - Haemophilus influenzae (strain Rd KW20)	57	38	768
123	4	2108	2884	gnl PID d102148	[AB001684] sulfate transport system permease protein [Chlorella vulgaris]	57	39	777
127	10	6477	5587	gi 1573082	nitrogenase C (nifC) [Haemophilus influenzae]	57	35	891
128	13	9251	9790	gi 153692	pneumolysin [Streptococcus pneumoniae]	57	38	540
131	4	2139	1363	gi 42081	nagD gene product (AA 1-250) [Escherichia coli]	57	36	777

TABLE 2
S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
136	1	214	1221	bbs 148453	SpaA-endocarditis immunodominant antigen (Streptococcus sobrinus, MUCOB 263, Peptide, 1566 aa) (Streptococcus sobrinus)	57	44	1008
140	25	28701	26851	gi 505576	beta-glucoside permease (Bacillus subtilis)	57	38	1851
141	6	6395	7438	gi 395560	unknown (Schizosaccharomyces pombe)	57	41	1044
144	3	3231	2785	gnl PID d100139	ORF (Acetobacter pasteurianus)	57	42	447
155	4	5454	4564	gi 600431	glycosyl transferase (Erwinia amylovora)	57	34	891
159	9	4877	5854	gi 290509	o307 (Escherichia coli)	57	35	978
167	11	9710	9249	gnl PID d100139	ORF (Acetobacter pasteurianus)	57	42	462
171	6	4023	4436	gi 147402	mannose permease subunit III-Man (Escherichia coli)	57	29	414
178	4	2170	1076	gnl PID d102004	(AB001488) ATP-DEPENDENT RNA HELICASE DEAD HOMOLOG. (Bacillus subtilis)	57	39	1095
190	1	145	1455	gi 149420	export/processing protein (Lactococcus lactis)	57	30	1311
198	1	298	95	gi 522268	unidentified ORF22 (Bacteriophage BIL67)	57	36	204
203	2	3195	2110	gnl PID e283915	orf c01003 (Sulfolobus solfataricus)	57	41	1086
205	1	40	507	gi 1439527	EIIA-man (Lactobacillus curvatus)	57	28	468
214	7	4243	3797	gnl PID d102049	H. influenzae, ribosomal protein alanine acetyltransferase; P44305 (189) (Bacillus subtilis)	57	48	447
268	3	1767	1276	gi 43979	L. curvatus small cryptic plasmid gene for rep protein (Lactobacillus curvatus)	57	36	492
351	1	324	34	gnl PID e275871	T03F6.b (Caenorhabditis elegans)	57	31	291
386	1	226	2	gi 160671	S antigen precursor (Plasmodium falciparum)	57	45	225
5	5	10486	8777	gi 405857	yehu (Escherichia coli)	56	33	1710
8	5	3674	3910	gi 467199	pksC; L518.F1.2 (Mycobacterium leprae)	56	39	237
10	3	3442	1874	gnl PID d101907	sodium-coupled permease (Synechocystis sp.)	56	36	1569
21	1	1880	333	gi 2313949	(AE000593) osmoprotection protein (proWX) (Helicobacter pylori)	56	33	1548
22	29	21968	22456	gnl PID d102001	(AB001488) PROBABLE ACETYLTRANSFERASE. (Bacillus subtilis)	56	37	489
27	1	1361	3	gi 215132	aa59 (525) (Bacteriophage lambda)	56	30	1359
28	9	4667	4278	gi 1592090	DNA repair protein RAD2 (Methanococcus jannaschii)	56	29	390
33	1	3	386	gnl PID d100139	ORF (Acetobacter pasteurianus)	56	41	384

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
36	7	5122	5397	pir PQ0053 PQ00	hypothetical protein (proC 3' region) - Pseudomonas aeruginosa (strain PAO) (fragment)	56	28	276
40	4	3137	4318	gi 1800301	macrolide-efflux determinant [Streptococcus pneumoniae]	56	27	1182
40	16	13511	13191	gnl PID e217602	plnU [Lactobacillus plantarum]	56	38	681
48	17	13775	13023	gi 143729	transcription activator [Bacillus subtilis]	56	35	753
75	4	1674	2594	gnl PID d102036	membrane protein [Bacillus stearothermophilus]	56	25	921
85	3	1842	1459	gnl PID d100139	ORF [Acetobacter pasteurianus]	56	41	384
89	7	5815	4940	gi 853777	product similar to E.coli PRFA2 protein [Bacillus subtilis]	56	42	876
105	2	1360	2718	gnl PID d101913	hypothetical protein [Synecocystis sp.]	56	37	1359
112	3	2151	3194	gi 537201	ORF_0345 [Escherichia coli]	56	31	1044
113	4	2754	2963	gnl PID d100340	ORF [Plum pox virus]	56	28	210
122	3	1203	2054	gi 1649035	high-affinity periplasmic glutamine binding protein [Salmonella typhimurium]	56	30	852
124	8	3939	3694	gnl PID e248893	unknown [Mycobacterium tuberculosis]	56	27	246
125	4	4403	4107	gnl PID d100247	human non-muscle myosin heavy chain (Homo sapiens)	56	32	297
127	11	6608	6405	gi 2182397	[AE000073] Y4fN [Rhizobium sp. NGR234]	56	35	204
134	5	4769	3849	gnl PID d101870	hypothetical protein [Synecocystis sp.]	56	39	921
137	10	6814	7245	gi 1592011	sulfate permease (cysA) [Methanococcus jannaschii]	56	34	432
142	8	5019	4582	pir A47071 A470	orf1 immediately 5' of nifs - Bacillus subtilis	56	29	438
146	8	4676	3660	gnl PID d101911	hypothetical protein [Synecocystis sp.]	56	32	1017
148	3	1906	2739	gnl PID d101099	phosphate transport system permease protein PstA [Synecocystis sp.]	56	36	834
150	4	4449	2743	gnl PID e304628	probably site-specific recombinase of the resolvase family of enzymes [Bacteriophage TP21]	56	27	1707
172	1	2	208	gi 1787791	[AE000249] f317; This 317 aa orf is 27 pct identical (16 gaps) to 301 residues of an approx. 320 aa protein YXKC_BACSU SW: P39140 [Escherichia coli]	56	34	207
172	7	4979	5668	gi 396293	similar to Bacillus subtilis hypoth. 20 kDa protein, in tar 3' region [Escherichia coli]	56	40	690
186	7	3732	3367	gi 1732200	PTS permease for mannose subunit IIPMan [Vibrio furnissii]	56	36	366
187	2	2402	819	pir S57904 S579	virA49 protein - Streptococcus pyogenes (strain CS101, serotype M49)	56	35	1584

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
204	3	2772	2239	gi 606376	ORF_0162 [Escherichia coli]	56	35	534
206	2	3342	1633	gi 559861	clyM [Plasmid PAD1]	56	38	1710
219	3	1689	1096	gi 1146197	putative [Bacillus subtilis]	56	27	594
230	2	409	1485	pir C60328 C603	hypothetical protein 2 (sr 5' region) - Streptococcus mutans (strain OM2175, serotype f)	56	40	1077
233	4	2930	3268	gi 1041785	rhostry protein [Plasmodium yoelii]	56	24	339
273	2	1543	2724	gi 143089	lep protein [Bacillus subtilis]	56	32	1182
353	1	1	516	gnl PID e325000	hypothetical protein [Bacillus subtilis]	56	41	516
359	1	87	641	gi 1786952	[AE000176] o877; 100 pct identical to the first 86 residues of the 100 aa hypothetical protein fragment Y8GB_ECOLI SW: P54746 [Escherichia coli]	56	46	555
363	7	4482	4198	gi 1573353	outer membrane integrity protein (tolA) [Haemophilus influenzae]	56	38	285
376	1	2	508	gnl PID e325031	hypothetical protein [Bacillus subtilis]	56	33	507
18	1	836	177	gnl PID d100872	a negative regulator of pho regulon [Pseudomonas aeruginosa]	55	31	660
28	4	1824	1618	gnl PID e316518	STAT protein [Dictyostelium discoideum]	55	40	207
29	6	4496	5041	gi 1088261	unknown protein [Anabaena sp.]	55	31	546
38	16	9695	10702	gi 580905	B. subtilis genes rpmH, rnpA, 50kd, gida and gldb [Bacillus subtilis]	55	31	1008
49	5	5727	6182	gi 1786951	[AE000176] heat-responsive regulatory protein [Escherichia coli]	55	29	456
51	4	2381	3241	gnl PID d101293	ybbA [Bacillus subtilis]	55	42	861
52	9	9640	10866	gi 153016	ORF 419 protein [Staphylococcus aureus]	55	23	1227
53	4	1813	1349	gi 896042	ospF [Borrelia burgdorferi]	55	30	465
60	5	4794	5756	gi 1499876	magnesium and cobalt transport protein [Methanococcus jannaschii]	55	38	963
71	9	14176	15408	gi 1857120	glycosyl transferase [Neisseria meningitidis]	55	41	1233
75	6	3189	4229	gnl PID e209890	NAD alcohol dehydrogenase [Bacillus subtilis]	55	44	1041
108	10	10488	9820	gnl PID e324997	hypothetical protein [Bacillus subtilis]	55	36	669
113	12	12273	13037	gnl PID e311496	unknown [Bacillus subtilis]	55	34	765
113	13	13007	13945	gi 1573423	1-phosphofructokinase (fruK) [Haemophilus influenzae]	55	39	939
126	5	6764	5907	gi 1790131	[AE000446] hypothetical 29.7 kD protein in tlpA-gyrB intergenic region [Escherichia coli]	55	37	858

TABLE 2
S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
129	3	2719	902	gnl PID d101425	peptidase [Bacillus licheniformis]	55	35	1818
138	3	2593	1610	gi 142833	ORF2 [Bacillus subtilis]	55	37	984
140	6	6916	5633	gnl PID d100964	homologue of hypothetical protein in a rapamycin synthesis gene cluster of Streptomyces hygroscopicus [Bacillus subtilis]	55	26	1284
147	3	3854	2136	gi 472330	dihydrolipoamide dehydrogenase [Clostridium magnum]	55	39	1719
147	10	10204	8921	gnl PID e73078	dihydroorotase [Lactobacillus leichmannii]	55	38	1284
148	5	3430	4119	gi 290572	peripheral membrane protein U [Escherichia coli]	55	29	690
148	6	4171	4650	gi 695769	transposase [Xanthobacter autotrophicus]	55	37	480
149	14	12564	11650	gnl PID d101329	YqjG [Bacillus subtilis]	55	32	915
156	3	1113	550	gi 2314496	(AE000634) conserved hypothetical integral membrane protein (Helicobacter pylori)	55	34	564
159	10	6625	5897	gi 290533	similar to E. coli ORF adjacent to suc operon; similar to gntR class of regulatory proteins [Escherichia coli]	55	29	729
164	3	1784	2332	gnl PID e255118	hypothetical protein [Bacillus subtilis]	55	37	549
164	5	2772	3521	gi 40348	put. resolvase Tnp I (AA 1 - 284) [Bacillus thuringiensis]	55	35	750
164	11	7428	7216	gnl PID e249407	unknown [Mycobacterium tuberculosis]	55	38	213
167	5	3860	3345	gi 535052	involved in protein secretion [Bacillus subtilis]	55	28	516
186	5	2880	2563	gi 606080	ORF_0290; Geneplot suggests frameshift linking to o267, not found [Escherichia coli]	55	35	318
189	8	4311	5396	gnl PID e183450	hypothetical EcsB protein [Bacillus subtilis]	55	32	1086
192	5	3270	3079	gi 1196504	vitellogenin convertase [Aedes aegypti]	55	38	192
195	2	2454	1384	gi 1574693	transferase, peptidoglycan synthesis (murG) [Haemophilus influenzae]	55	33	1071
198	4	3013	2471	gnl PID e313074	hypothetical protein [Bacillus subtilis]	55	29	543
214	1	373	744	gnl PID d101741	transposase [Synechocystis sp.]	55	33	372
219	2	1115	456	gi 288301	ORF2 gene product [Bacillus megaterium]	55	30	660
263	7	3742	3443	gi 18137	cgcr-4 product [Chlamydomonas reinhardtii]	55	48	300
285	1	2	829	gnl PID d100974	unknown [Bacillus subtilis]	55	40	828
286	1	650	249	gi 396844	ORF (18 kDa) [Vibrio cholerae]	55	31	402
297	2	1229	1696	gi 150848	prtC [Porphyromonas gingivalis]	55	39	468

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
309	2	218	982	gi 1574491	hypothetical [Haemophilus influenzae]	55	35	765
328	2	646	224	gi 571500	prohibitin [Saccharomyces cerevisiae]	55	27	423
330	1	1340	474	gi 396397	soxS [Escherichia coli]	55	29	867
364	3	2538	1546	gi 393394	TB-291 membrane associated protein [Trypanosoma brucei subgroup]	55	36	993
368	3	941	105	gi 160671	S antigen precursor [Plasmodium falciparum]	55	40	837
3	5	4604	3624	gi 2293176	(AF008220) signal transduction protein kinase [Bacillus subtilis]	54	26	981
9	11	7746	7246	gi 1146245	putative [Bacillus subtilis]	54	38	501
38	24	16213	17937	gi 1480429	putative transcriptional regulator [Bacillus stearothermophilus]	54	27	1725
40	8	5076	4882	gi 39989	methionyl-tRNA synthetase [Bacillus stearothermophilus]	54	35	195
43	4	3980	2367	gnl PID e148611	ABC transporter [Lactobacillus helveticus]	54	25	1614
52	10	10844	12103	gi 1762962	Fema [Staphylococcus simulans]	54	29	1260
57	1	3	512	gi 558177	endo-1,4-beta-xylanase [Cellulomonas fimi]	54	36	510
58	3	4749	4246	gnl PID d101237	hypothetical [Bacillus subtilis]	54	29	504
71	7	10684	11703	gi 510255	orf3 [Escherichia coli]	54	31	1020
71	20	27546	27737	gi 202543	serotonin receptor [Rattus norvegicus]	54	31	192
72	2	844	1098	gi 148613	srnB gene product [Plasmid F]	54	37	255
72	7	7438	6595	gi 1196496	recombinase [Moraxella bovis]	54	38	744
74	10	14043	13465	gi 1200342	ORF 3 gene product [Bradyrhizobium japonicum]	54	32	579
74	12	16483	15995	gi 2317798	maturase-related protein [Pseudomonas alcaligenes]	54	30	489
86	3	2877	2155	gi 46988	orf9.6 possibly encodes the O unit polymerase [Salmonella enterica]	54	34	723
89	5	4433	3921	gi 147211	phnO protein [Escherichia coli]	54	41	513
90	1	3	464	gi 2317798	maturase-related protein [Pseudomonas alcaligenes]	54	30	462
96	10	8058	8510	gnl PID d102015	(AB001488) SIMILAR TO SALMONELLA TYPHIMURIUM SLVY GENE REQUIRED FOR SURVIVAL IN MACROPHAGE. [Bacillus subtilis]	54	32	453
97	6	4662	3604	gi 1591394	transketolase [Methanococcus jannaschii]	54	30	1059
106	11	10406	12010	gi 606286	ORF_o637 [Escherichia coli]	54	32	1605
147	8	8663	7404	gnl PID d101615	ORF_ID:o31987; similar to [Swissprot Accession Number P37340] [Escherichia coli]	54	35	1260

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
171	4	2477	3223	gi 1439528	ELIC-man [Lactobacillus curvatus]	54	36	747
174	2	2068	1787	gnl PID d100518	motor protein [Homo sapiens]	54	35	282
188	1	526	1188	gnl PID e250352	unknown [Mycobacterium tuberculosis]	54	31	663
198	5	3582	2884	gnl PID e313074	hypothetical protein [Bacillus subtilis]	54	33	699
207	1	1	1641	gnl PID d101813	hypothetical protein [Synecocystis sp.]	54	24	1641
210	1	2	655	gi 2293206	[AF008220] Ytgp [Bacillus subtilis]	54	29	654
225	2	966	2357	gnl PID e310194	R11H6.1 [Caenorhabditis elegans]	54	39	1392
241	1	1681	347	gnl PID d101813	hypothetical protein [Synecocystis sp.]	54	26	1335
263	2	907	1395	gnl PID d101886	transposase [Synecocystis sp.]	54	30	489
263	6	3450	2977	gi 160671	S antigen precursor [Plasmodium falciparum]	54	47	474
277	3	2517	1363	gi 1196926	unknown protein [Streptococcus mutans]	54	30	1155
307	1	828	4	gi 2293198	[AF008220] Ytgp [Bacillus subtilis]	54	28	825
325	1	19	768	gi 2182507	[AE000083] YtH [Rhizobium sp. NOR234]	54	37	750
332	2	898	590	gi 1591815	ADP-ribosylglycohydrolase (drag) [Methanococcus jannaschii]	54	32	309
385	4	240	479	gi 530878	amino acid feature: N-glycosylation sites, aa 41 ... 43, 46 ... 48, 51 ... 53, 72 ... 74, 107 ... 109, 128 ... 130, 132 ... 134, 158 ... 160, 163 ... 165; amino acid feature: Rod protein domain, aa 169 ... 340; amino acid feature: globular protein domain	54	49	240
7	25	19702	19493	gnl PID e255111	hypothetical protein [Bacillus subtilis]	53	32	210
23	3	2497	2033	gnl PID d102015	(AB001488) SIMILAR TO SALMONELLA TYPHIMURIUM SLYY GENE REQUIRED FOR SURVIVAL IN MACROPHAGE. [Bacillus subtilis]	53	25	465
29	11	9042	10121	gi 143331	alkaline phosphatase regulatory protein [Bacillus subtilis]	53	31	1080
33	3	1479	1009	plr S10655 S106	hypothetical protein X - Pyrococcus woesei (fragment)	53	33	471
36	6	4583	5134	gnl PID e316029	unknown [Mycobacterium tuberculosis]	53	30	552
38	14	8521	8898	gi 580904	homologous to E.coli rnpA [Bacillus subtilis]	53	30	378
52	7	7007	8686	gi 1377831	unknown [Bacillus subtilis]	53	29	1680
54	17	17555	19564	gi 666069	orf2 gene product [Lactobacillus leichmannii]	53	36	2010
56	1	1	681	gi 1592266	restriction modification system S subunit [Methanococcus jannaschii]	53	32	681

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
57	10	9431	8487	gi 1788543	(AE000310) f351; Residues 1-121 are 100 pct identical to YQJL_ECOLI SW: P33944 (122 aa) and aa 152-351 are 100 pct identical to YQJK_ECOLI SW: P33943 [Escherichia coli]	53	31	945
61	1	429	4	gnl PID e236467	B0024.12 [Caenorhabditis elegans]	53	33	426
71	1	5772	4	gi 393394	Tb-291 membrane associated protein [Trypanosoma brucei subgroup]	53	33	5769
72	3	894	2840	gi 2293178	(AF008220) YtsD [Bacillus subtilis]	53	27	1947
73	14	9793	9212	gi 1778556	putative cobalamin synthesis protein [Escherichia coli]	53	32	582
88	7	5217	4342	gi 2098719	putative fimbrial-associated protein [Actinomyces naeslundii]	53	38	876
93	5	2395	1688	gi 563366	gluconate oxidoreductase [Gluconobacter oxydans]	53	33	708
96	9	6632	7762	gi 517204	ORF1, putative 42 kDa protein [Streptococcus pyogenes]	53	42	1131
108	8	7629	8600	gi 149581	maturation protein [Lactobacillus paracasei]	53	32	972
128	9	6412	6972	gnl PID e317237	unknown [Mycobacterium tuberculosis]	53	36	561
128	12	8429	9253	gi 311070	pentraxin fusion protein [Xenopus laevis]	53	31	825
148	1	3	950	plr a61607 a616	probable hemolysin precursor - Streptococcus agalactiae (strain 74-360)	53	36	948
163	2	2162	3022	gi 1755150	nocturnin [Xenopus laevis]	53	30	861
171	3	2304	2624	gi 1732200	PTS permease for mannose subunit lipMan [Vibrio furnissii]	53	32	321
182	5	3785	3051	gnl PID d100572	unknown [Bacillus subtilis]	53	35	735
209	3	2948	1935	gi 1778505	ferric enterobactin transport protein [Escherichia coli]	53	28	1014
218	5	3884	2406	gi 40162	murE gene product [Bacillus subtilis]	53	34	1479
250	3	473	790	gnl PID e34776	YibH protein [Bacillus subtilis]	53	30	318
275	1	1	1611	gnl PID d101314	Yqew [Bacillus subtilis]	53	35	1611
332	1	544	2	gi 409286	barU [Bacillus subtilis]	53	31	543
2	2	2543	3445	gnl PID e233879	hypothetical protein [Bacillus subtilis]	52	39	903
3	22	22402	23376	gi 38969	lacF gene product [Agrobacterium radiobacter]	52	36	975
5	3	8094	2356	gnl PID e324915	IgaI protease [Streptococcus sanguis]	52	32	5739
22	26	19961	20212	gi 152901	ORF 3 [Spirochaeta aurantia]	52	35	252
22	31	23140	24666	gi 289262	comE ORF3 [Bacillus subtilis]	52	32	1527
27	6	5397	4801	gi 39573	P20 (AA 1-178) [Bacillus licheniformis]	52	35	597

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
35	10	8604	7357	gi 508241	putative O-antigen transporter [Escherichia coli]	52	27	1248
45	4	4801	3662	gnl PID d102243	(AB005554) homologs are found in E. coli and H. influenzae; see SWISS_PROT ACC# P42100 [Bacillus subtilis]	52	36	1140
48	18	14385	13726	gnl PID e205174	orf2 [Lactobacillus helveticus]	52	25	660
49	4	5321	5755	gi 2317740	(AF013987) nitrogen regulatory IIA protein [Vibrio cholerae]	52	19	435
54	4	2773	4668	gi 1500472	M. jannaschii predicted coding region MJ1577 [Methanococcus jannaschii]	52	36	1896
54	6	5250	4969	gi 2182453	(AE000079) Y410 [Rhizobium sp. NGR234]	52	40	282
66	6	8400	6955	gi 43140	TrkG protein [Escherichia coli]	52	30	1446
71	26	30659	31312	gnl PID e314993	unknown [Mycobacterium tuberculosis]	52	23	654
75	2	1673	1035	gnl PID d102271	(AB001683) FarA [Streptomyces sp.]	52	27	639
81	3	1439	2893	gnl PID e311458	rhamnulose kinase [Bacillus subtilis]	52	32	1455
81	8	4987	5781	gi 147403	mannose permease subunit II-P-Man [Escherichia coli]	52	37	795
83	21	20687	21853	gi 143365	phosphoribosyl aminimidazole carboxylase II (PUR-K; ttg start codon) [Bacillus subtilis]	52	37	1167
86	6	5785	4592	gi 1276879	EpsP [Streptococcus thermophilus]	52	26	1194
86	20	19390	17861	gi 454844	ORF 3 [Schistosoma mansoni]	52	26	1530
96	13	10540	9659	gi 288299	ORF1 gene product [Bacillus megaterium]	52	33	882
111	1	2	2026	gi 148309	cytolysin B transport protein [Enterococcus faecalis]	52	27	2025
112	2	1457	2167	gi 471234	orf1 [Haemophilus influenzae]	52	33	711
118	3	2931	2365	bbs 151233	Mip-24 kDa macrophage infectivity potentiator protein [Legionella pneumophila, Philadelphia-1, Peptide, 184 aa] [Legionella pneumophila]	52	33	567
122	9	5646	5951	gi 8214	myosin heavy chain [Drosophila melanogaster]	52	36	306
122	11	6159	6374	gi 434025	diacylglycerol acetyltransferase [Pelobacter carbinolicus]	52	52	216
134	6	4880	6313	gi 153733	M protein trans-acting positive regulator [Streptococcus pyogenes]	52	43	1434
135	3	1238	2716	gnl PID e245024	unknown [Mycobacterium tuberculosis]	52	35	1479
141	3	1681	2319	gnl PID d100573	unknown [Bacillus subtilis]	52	32	639
161	4	2562	5024	gi 1146243	22.4% identity with Escherichia coli DNA-damage inducible protein ...; putative [Bacillus subtilis]	52	36	2463
173	2	968	183	gi 1215693	putative orf; GT9orf434 [Mycoplasma pneumoniae]	52	30	786

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	sim	ident	length (nt)
198	6	4400	3567	gnl PID e313010	hypothetical protein [Bacillus subtilis]	52	26	834
210	12	8844	9107	gi 497647	DNA gyrase subunit B (Mycoplasma genitalium)	52	38	264
214	10	5264	5431	gi 550697	envelope protein [Human immunodeficiency virus type 1]	52	36	168
225	1	15	884	gi 1552773	hypothetical [Escherichia coli]	52	34	870
230	1	39	362	gnl PID d100582	unknown [Bacillus subtilis]	52	28	324
287	1	871	2	gnl PID e335028	protease/peptidase [Mycobacterium leprae]	52	29	870
363	2	1305	4	gi 393394	TB-291 membrane associated protein [Trypanosoma brucei subgroup]	52	32	1302
23	2	2048	1173	gnl PID e254943	unknown [Mycobacterium tuberculosis]	51	30	876
29	3	742	1521	gi 929900	5'-methylthioadenosine phosphorylase [Sulfolobus solfataricus]	51	31	780
45	1	410	1597	gi 1877429	integrase [Streptococcus pyogenes phage T12]	51	32	1188
48	26	19227	18946	gi 2314455	[AE000633] transcriptional regulator (tenA) [Helicobacter pylori]	51	33	282
73	5	4276	4016	gi 474177	alpha-D-1,4-glucosidase [Staphylococcus xylosus]	51	31	261
81	11	8935	12057	gi 311070	pentraxin fusion protein [Xenopus laevis]	51	31	3123
83	5	1195	1986	gnl PID d101316	YqfI [Bacillus subtilis]	51	33	792
98	10	7531	8538	gi 41500	[ORF 3 (AA 1-352); 38 kD (put. ftsX) [Escherichia coli]	51	28	1008
113	6	3908	5173	gi 466882	[pps1; B1496_C2_189 [Mycobacterium leprae]	51	27	1266
124	1	326	57	gi 2191168	[AF007270] contains similarity to myosin heavy chain [Arabidopsis thaliana]	51	32	270
129	10	7286	6816	gi 1046241	[orf14 [Bacteriophage HP1]	51	30	471
143	3	4963	3983	gi 1354935	probable copper-transporting atpase [Escherichia coli]	51	26	981
148	15	11359	10226	gi 2293256	[AF008220] putative hippurate hydrolase [Bacillus subtilis]	51	36	1134
149	8	6003	7313	gi 1633572	Herpesvirus saimiri ORF73 homolog [Kaposi's sarcoma-associated herpes-like virus]	51	21	1311
151	9	12092	11550	gnl PID e281580	hypothetical 40.7 kD protein [Bacillus subtilis]	51	34	543
159	6	2555	3208	gi 146944	[CMP-N-acetylneuraminic acid synthetase [Escherichia coli]	51	36	654
174	1	1797	4	gi 1773166	probable copper-transporting atpase [Escherichia coli]	51	28	1794
265	4	2231	1773	gnl PID e256400	[anti-P. falciparum antigenic polypeptide [Saimiri sciureus]	51	18	459
277	2	643	1311	pir S32915 S329	p110 protein - Neisseria gonorrhoeae	51	33	669

TABLE 2
S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
350	1	890	3	gi 290509	o307 [Escherichia coli]	51	30	888
363	4	1228	4485	gi 1707247	partial CDS [Caenorhabditis elegans]	51	23	3258
367	1	1701	4	gi 393394	Tb-291 membrane associated protein [Trypanosoma brucei subgroup]	51	32	1698
15	5	5174	4497	gnl pid e58151	F3 [Bacillus subtilis]	50	38	678
16	4	2220	2582	gnl pid e325010	hypothetical protein [Bacillus subtilis]	50	29	363
19	5	2591	4159	gi 1552733	similar to voltage-gated chloride channel protein [Escherichia coli]	50	30	1569
25	4	2701	1997	gi 887849	ORF_f219 [Escherichia coli]	50	27	705
35	1	211	417	gnl pid e236697	unknown [Saccharomyces cerevisiae]	50	33	207
39	4	3416	5152	gnl pid d100974	unknown [Bacillus subtilis]	50	27	1737
51	7	4000	5181	gi 1592027	carbamoyl-phosphate synthase, pyrimidine-specific, large subunit [Methanococcus jannaschii]	50	27	1182
51	9	7179	8303	gi 1591847	type I restriction-modification enzyme, S subunit [Methanococcus jannaschii]	50	28	1125
52	8	8740	9534	gi 144297	acetyl esterase (xymC) [Caldocellum saccharolyticum]	50	34	795
52	16	16591	15770	gi 2108229	basic surface protein [Lactobacillus fermentum]	50	34	822
57	7	6031	6336	gi 2275264	60S ribosomal protein L7B [Schizosaccharomyces pombe]	50	40	306
71	23	29348	28383	gnl pid d101328	YqjA [Bacillus subtilis]	50	30	966
86	12	11155	10769	gnl pid e324964	hypothetical protein [Bacillus subtilis]	50	24	387
93	2	1205	330	gi 1066016	similar to Escherichia coli pyruvate, water dikinase, Swiss-Prot Accession Number P23538 [Pyrococcus furiosus]	50	24	876
96	5	1673	2959	gnl pid e322433	gamma-glutamylcysteine synthetase [Brassica juncea]	50	29	1287
98	2	218	1171	gi 151110	leucine-, isoleucine-, and valine-binding protein [Pseudomonas aeruginosa]	50	30	954
103	4	3303	2785	gi 154330	O-antigen ligase [Salmonella typhimurium]	50	31	519
115	5	6480	5980	gi 895747	putative cel operon regulator [Bacillus subtilis]	50	26	501
129	11	7559	7305	gi 1216475	skeletal muscle ryanodine receptor [Homo sapiens]	50	32	255
129	13	8192	7965	gi 152271	319-kDa protein [Rhizobium meliloti]	50	30	228
151	5	7634	6819	gi 40348	put. resolvase Tnp I (AA 1 - 284) [Bacillus thuringiensis]	50	35	816
153	1	1	597	gnl pid d102015	(AB001488) SIMILAR TO NITROREDUCTASE. [Bacillus subtilis]	50	29	597

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
155	5	5986	5432	gi 1276880	EpsG [Streptococcus thermophilus]	50	28	555
160	9	7390	6323	gi 1786983	(AE000179) o311; 92 pct identical to the 133 aa hypothetical protein YBHE_ECOLI SW: P52697; 26 pct identical (7 gaps) to 167 residues of the 373 aa protein MLE-TRICU SW: P46057; SW: P52697 [Escherichia coli]	50	30	1068
163	6	7396	8091	gnl pid d101313	Yqen [Bacillus subtilis]	50	22	696
167	6	5232	3940	gi 413926	Ipa-2r gene product [Bacillus subtilis]	50	27	1293
169	2	807	130	gnl pid e304540	endolysin [Bacteriophage Bastille]	50	35	678
171	5	3168	4025	gi 606080	ORF_o290; Geneplot suggests frameshift linking to o267, not found [Escherichia coli]	50	27	858
210	11	8151	8414	gi 330038	HRV 2 polypeptide (Human rhinovirus)	50	25	264
364	1	1538	135	gi 393396	Tb-292 membrane associated protein [Trypanosoma brucei subgroup]	50	31	1404
10	7	5911	5090	gi 144859	ORF B [Clostridium perfringens]	49	24	822
26	5	10754	9768	gi 142440	ATP-dependent nuclease [Bacillus subtilis]	49	31	987
66	7	9777	8398	gi 414170	ErkA gene product [Methanococcus marisnigri]	49	26	1380
77	6	5364	4648	gnl pid e285322	RecX protein [Mycobacterium smegmatis]	49	28	717
82	13	12689	13249	gnl pid e255091	hypothetical protein [Bacillus subtilis]	49	20	561
93	9	4866	4531	gi 40067	X gene product [Bacillus sphaericus]	49	26	336
112	5	4019	4948	gi 1574380	Ilic-1 operon protein (IlicB) [Haemophilus influenzae]	49	27	930
129	7	6058	4949	gnl pid e267587	Unknown [Bacillus subtilis]	49	35	1110
135	5	3875	4438	gi 39573	P20 (AA 1-178) [Bacillus licheniformis]	49	25	564
154	2	1423	1953	gnl pid d101102	regulatory components of sensory transduction system [Synechocystis sp.]	49	29	531
156	5	2878	1637	gnl pid d101732	hypothetical protein [Synechocystis sp.]	49	25	1242
173	5	3500	2940	gi 490324	LORF X gene product [unidentified]	49	30	561
182	1	1057	2	gi 331002	first methionine codon in the ECLF1 ORF [Saimiriine herpesvirus 2]	49	25	1056
192	6	5352	3667	gi 2394472	(AF024499) contains similarity to homeobox domains [Caenorhabditis elegans]	49	23	1686
253	4	1129	1350	gi 531116	SIR4 protein [Saccharomyces cerevisiae]	49	23	222
277	1	600	136	gi 396844	ORF (18 kDa) [Vibrio cholerae]	49	32	465
327	3	1435	887	gi 733524	phosphatidylinositol-4,5-diphosphate 3-kinase [Dictyostellium discoideum]	49	24	549

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
365	3	1436	132	gi 393394	Tb-291 membrane associated protein [Trypanosoma brucei subgroup]	49	31	1305
33	7	4461	3277	gi 145644	codes for a protein of unknown function [Escherichia coli]	48	26	1185
40	2	652	1776	gnl PID e290649	ornithine decarboxylase [Nicotiana tabacum]	48	29	1125
67	4	1377	2384	gi 1772652	2-keto-3-deoxygluconate kinase [Haloferax alicantel]	48	30	1008
74	2	4269	3871	gi 2182678	(AE000101) Y4WJ [Rhizobium sp. NGR234]	48	27	399
81	2	1326	541	gi 153672	lactose repressor [Streptococcus mutans]	48	33	786
81	4	2981	3646	gi 146042	fucose-1-phosphate aldolase (fucA) [Escherichia coli]	48	30	666
97	1	602	51	gi 153794	rgg [Streptococcus gordonii]	48	29	552
110	1	1	3132	gi 1381114	prtB gene product [Lactobacillus delbrueckii]	48	23	3132
131	5	2914	2147	gnl PID e183811	Acyl-ACP thioesterase [Brassica napus]	48	27	768
133	4	3494	2628	gnl PID e261988	putative ORF [Bacillus subtilis]	48	27	867
139	6	4231	4599	gi 1049388	ZK470.1 gene product [Caenorhabditis elegans]	48	23	369
139	8	5036	5665	gi 1022725	unknown [Staphylococcus haemolyticus]	48	29	630
140	12	11936	11007	gnl PID d102049	H. influenzae, ribosomal protein alanine acetyltransferase; P44305 (189) [Bacillus subtilis]	48	27	930
146	9	5670	4654	gi 1591731	melvalonate kinase [Methanococcus jannaschii]	48	24	1017
161	3	1280	2374	gnl PID d101578	Collagenase precursor (EC 3.4.-.-) [Escherichia coli]	48	24	1095
172	11	10581	11048	gnl PID d101132	hypothetical protein [Synechocystis sp.]	48	27	468
182	4	2930	2586	gi 40067	x gene product [Bacillus sphaericus]	48	37	345
210	15	10786	11196	sp P13940 LE29_	LATE EMBRYOGENESIS ABUNDANT PROTEIN D-29 (LEA D-29).	48	30	411
214	12	6231	6482	gi 40389	non-toxic components [Clostridium botulinum]	48	26	252
221	1	704	3	gi 1573364	H. influenzae predicted coding region H10392 [Haemophilus influenzae]	48	27	702
227	2	647	3928	gi 1673693	(AE000005) Mycoplasma pneumoniae, C09_orf718 Protein [Mycoplasma pneumoniae]	48	30	3282
253	2	480	758	gnl PID e236697	unknown [Saccharomyces cerevisiae]	48	31	279
363	3	1874	1122	gi 18137	cgr-4 product [Chlamydomonas reinhardtii]	48	40	753
389	1	505	2	gi 18137	cgr-4 product [Chlamydomonas reinhardtii]	48	38	504
3	121	20879	22258	gnl PID e264778	putative maltose-binding protein [Streptomyces coelicolor]	47	33	1380

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
6	4	4089	4658	gi 39573	P20 (AA 1-178) [Bacillus licheniformis]	47	23	570
15	3	3736	1760	gnl PID d100572	unknown [Bacillus subtilis]	47	25	1977
35	15	14516	13263	gi 1773351	Cap5L [Staphylococcus aureus]	47	20	1254
51	6	3547	4002	pir A37024 A370	32K antigen precursor - Mycobacterium tuberculosis	47	38	456
55	8	10154	9273	gi 39848	U3 [Bacillus subtilis]	47	26	882
92	4	1753	3276	gnl PID e280611	PCPC [Streptococcus pneumoniae]	47	35	1524
127	9	5589	5386	gi 1786458	(AE000134) f120; This 120 aa orf is 76 pct identical (0 gaps) to 42 residues of an approx. 48 aa protein Y127_HAEIN SW: P43949 [Escherichia coli]	47	32	204
130	2	1232	1759	gnl PID e266555	unknown [Mycobacterium tuberculosis]	47	23	528
140	4	4951	3542	gnl PID d100964	homologue of hypothetical protein in a rapamycin synthesis gene cluster of Streptomyces hygroscopicus [Bacillus subtilis]	47	24	1410
151	4	6814	6200	gi 1522674	M. jannaschii predicted coding region MJEC41 [Methanococcus jannaschii]	47	27	615
157	3	803	1174	gnl PID d101320	Ygg2 [Bacillus subtilis]	47	25	372
178	5	3267	2155	gi 2367190	(AE000390) o334; sequence change joins ORFs ygjR & ygjS from earlier version (YGJR_ECOLI SW: P42599 and YGJS_ECOLI SW: P42600) [Escherichia coli]	47	30	1113
273	1	2	1549	gnl PID e254973	autolysin sensor kinase [Bacillus subtilis]	47	32	1548
300	2	880	644	gi 1835755	zinc finger protein Png-1 [Mus musculus]	47	22	237
54	14	14182	12638	pir S43609 S436	rofa protein - Streptococcus pyogenes	46	24	1545
88	1	2	1018	gnl PID e222891	xylose repressor [Anaerocellum thermophilum]	46	27	1017
96	7	4553	5860	gnl PID d101652	ORF_ID:o34785; similar to [SwissProt Accession Number P45272] [Escherichia coli]	46	23	1308
112	1	1127	3	gi 2209215	(AF004325) putative oligosaccharide repeat unit transporter [Streptococcus pneumoniae]	46	24	1125
122	13	7308	7982	gi 1054776	hr44 gene product [Homo sapiens]	46	34	675
127	14	9198	8125	gi 1469286	afuA gene product [Actinobacillus pleuropneumoniae]	46	28	1074
132	4	7093	6197	gi 153794	rgg [Streptococcus gordonii]	46	26	897
140	8	8220	7723	gi 1235795	pullulanase [Thermoanaerobacterium thermosulfurigenes]	46	21	498
140	9	9205	8315	gi 407878	leucine rich protein [Streptococcus equisimilis]	46	27	891

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
162	1	1	1125	gi 1143209	ORF7; Method: conceptual translation supplied by author [Shigella sonnei]	46	25	1125
199	1	1	585	gi 1947171	[AF000299] No definition line found [Caenorhabditis elegans]	46	28	585
223	3	1971	1477	sp P02562 MYSS_	MYOSIN HEAVY CHAIN, SKELETAL MUSCLE (FRAGMENTS)	46	27	495
232	2	760	1608	gi 1016112	ycf38 gene product [Cyanophora paradoxa]	46	28	849
292	1	687	220	gi 1673744	(AE000011) Mycoplasma pneumoniae, cytidine deaminase; similar to GenBank Accession Number C5312, from M. pirum [Mycoplasma pneumoniae]	46	29	468
30	8	5843	6472	gi 1788049	(AE000270) o235; This 235 aa orf is 29 pct identical (10 gaps) to 198 residues of an approx. 216 aa protein YTXB_BACSU SW: P06568 [Escherichia coli]	45	24	630
48	6	3461	3868	gi 722339	unknown [Acetobacter xylinum]	45	29	408
60	1	307	2	gi 1699079	coded for by C. elegans cDNA yk41h4.3; coded for by C. elegans cDNA yk148g10.5; coded for by C. elegans cDNA yk152g5.5; coded for by C. elegans cDNA yk59a10.5; coded for by C. elegans cDNA yk41h4.5; coded for by C. elegans cDNA cm20g10; coded	45	36	306
72	16	14371	14874	gi 1321900	NADH dehydrogenase (ubiquinone) [Artemia franciscana]	45	25	504
99	7	9158	7941	gi 152192	mutation causes a succinoglucon-aminus phenotype; ExoQ is atransmembrane protein; third gene of the exoYQ operon;; putative [Rhizobium meliloti]	45	28	1218
127	12	7046	6606	bhs 153689	[Hit8-iron utilization protein [Haemophilus influenzae, type b, DL42, NTHI TN106, Peptide, 506 aa] [Haemophilus influenzae]	45	24	441
137	5	1561	2619	gi 472921	v-type Na-ATPase [Enterococcus faecalis]	45	33	1059
209	1	774	364	gi 304141	restriction endonuclease beta subunit [Bacillus coagulans]	45	28	411
314	1	604	2	gi 1480457	[latex allergen [Hevea brasiliensis]	45	31	603
20	18	19782	20288	gi 433942	ORF [Lactococcus lactis]	44	26	507
87	8	7030	6452	gi 537207	ORF_f277 [Escherichia coli]	44	26	579
166	5	4909	4037	gnl PID e308082	membrane transport protein [Bacillus subtilis]	44	25	873
247	1	818	75	gnl PID d100718	ORF1 [Bacillus sp.]	44	20	744
32	3	1885	3876	gi 2351768	[PspA [Streptococcus pneumoniae]	43	24	1992
36	17	15467	18256	gi 1045739	[M. genitalium predicted coding region MG064 [Mycoplasma genitalium]	43	26	2790
54	15	14656	17343	gi 520541	[penicillin-binding proteins 1A and 1B [Bacillus subtilis]	43	27	2688
67	2	896	1352	gi 536934	[yjcA gene product [Escherichia coli]	43	29	657
139	2	2416	338	gi 396400	[similar to eukaryotic Na+/H+ exchangers [Escherichia coli]	43	24	2079

TABLE 2

S. pneumoniae - Putative coding regions of novel proteins similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)	match accession	match gene name	% sim	% ident	length (nt)
298	1	3	809	gi 413972	lpa-48r gene product (Bacillus subtilis)	43	24	807
387	1	47	427	gi 2315652	[AF016669] No definition line found (Caenorhabditis elegans)	43	30	381
185	4	4221	3127	gi 2182399	[AE000073] Y4fp (Rhizobium sp. NGR234)	41	25	1095
340	1	582	70	gnl PID e218681	CDP-diacylglycerol synthetase (Arabidopsis thaliana)	41	20	513
363	6	4205	1914	gi 1256742	R27-2 protein (Trypanosoma cruzi)	41	27	2292
368	2	2	943	gi 21783	LWM glutenin (AA 1-356) (Triticum aestivum)	41	34	942
155	3	4489	2861	gi 42023	member of ATP-dependent transport family, very similar to mdr proteins and hemolysin B, export protein (Escherichia coli)	40	18	1629
365	2	95	1438	gi 1633572	Herpesvirus saimiri ORF73 homolog (Kaposi's sarcoma-associated herpes-like virus)	40	21	1344
1	3	2979	3860	gnl PID d101908	hypothetical protein (Synechocystis sp.)	39	26	882
1	5	3814	4647	gnl PID d101961	hypothetical protein (Synechocystis sp.)	39	19	834
26	6	14035	10724	gi 142439	ATP-dependent nuclease (Bacillus subtilis)	38	20	3312
47	1	3	4916	gi 632549	NF-180 (Petrotyzon marinus)	36	23	4914

TABLE 3

S. pneumoniae - Putative coding regions of novel proteins not similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)
1	4	3428	3009
1	6	4611	4964
3	2	818	994
3	3	1182	1574
3	7	5382	6497
3	25	25046	25396
3	26	25625	26317
6	2	1519	1689
6	14	12875	12618
6	15	13215	12841
6	18	15977	15390
7	12	9955	9419
7	13	10161	9910
8	6	3915	4280
9	9	6024	5704
10	8	6909	6298
10	9	7136	6888
10	11	7968	7672
12	1	1140	4
12	3	1779	1456
14	2	1913	1434
16	1	1	243
16	5	5675	3087
17	1	324	34
17	3	1451	1050
17	9	4890	4465
20	14	14544	15893

TABLE 3

S. pneumoniae - Putative coding regions of novel proteins not similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)
21	3	3359	2589
21	5	4802	4482
22	21	17099	17362
22	25	19467	19982
22	33	25540	25764
22	35	26388	26218
22	36	26382	27572
23	7	6655	6032
23	8	7132	6653
24	1	36	518
25	5	3009	2641
27	4	4819	4223
27	5	4789	4956
28	5	3017	1797
28	8	4272	3850
28	10	5028	4597
28	11	5746	5072
29	7	5596	4919
29	8	5039	5518
29	9	5595	8207
30	9	6511	6263
31	6	2664	2344
32	5	5203	5538
33	8	5327	4668
34	10	8024	7740
34	12	9360	8641
34	13	9667	9377

TABLE 3 *S. pneumoniae* - Putative coding regions of novel proteins not similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)
34	18	13104	11902
35	11	9688	8588
35	12	11073	9670
36	2	334	1041
36	12	11120	10893
36	13	10993	11388
36	15	12172	14595
38	7	4269	4577
38	8	4480	5001
38	10	5517	5711
38	17	10732	11376
40	3	1728	3143
43	1	172	5
43	7	8884	8732
43	8	9568	9071
44	4	4831	6831
45	3	3204	3665
46	4	3875	3468
46	7	6074	7081
48	5	3196	3582
48	8	4579	4229
48	11	9323	8922
48	16	13042	12494
48	20	16342	15764
48	24	17971	18351
48	30	21979	21776
49	1	209	3

TABLE 3

S. pneumoniae - Putative coding regions of novel proteins not similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)
50	4	3307	2672
51	5	3239	3598
52	11	12146	12883
54	7	5588	5187
54	8	6013	5459
54	9	6004	6210
54	16	17685	17506
55	9	10515	10123
55	12	11947	12141
56	3	935	1387
56	4	1496	1939
57	3	1624	2130
57	4	2100	2501
58	6	7541	7335
59	1	2	430
59	4	2416	2736
59	5	2734	3063
59	8	4743	5549
59	9	5459	5929
60	6	5741	6451
61	3	2395	1772
61	5	3316	3176
64	1	2722	2
66	2	1180	3147
66	8	9082	9495
67	3	1343	1182
69	2	1165	980

TABLE 3 *S. pneumoniae* - Putative coding regions of novel proteins not similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)
70	5	4059	3922
70	6	4215	4057
70	9	5268	5504
71	15	20351	21901
71	16	21859	22338
71	19	26204	27556
72	9	8458	8081
73	4	3815	4216
73	6	4214	4582
73	7	4369	4773
73	10	7183	6428
73	15	9462	9668
76	1	524	195
76	2	867	535
76	11	8602	9210
80	6	7924	8109
81	1	244	2
81	10	6631	8931
83	4	1872	1150
83	17	16810	16460
84	3	4464	2929
86	2	2147	1092
86	4	3606	2875
86	19	16767	17114
87	5	5326	5000
87	7	6459	6001
87	9	7224	7006

TABLE 3

S. pneumoniae - Putative coding regions of novel proteins not similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)
87	18	17930	17670
87	19	18275	17928
88	2	1619	1840
88	4	2711	2878
88	9	6252	6016
89	3	2634	1621
89	9	7371	6868
90	2	899	2395
90	3	1143	952
91	3	2959	3141
91	4	3170	3691
91	6	4253	4573
93	1	391	2
93	6	2648	2379
93	8	4533	3712
96	1	3	182
96	2	904	632
96	3	1407	1147
96	4	1250	1420
97	9	7043	6753
99	15	18522	18692
99	17	19717	19541
100	2	4094	1980
103	1	48	299
103	6	4924	4373
104	5	6142	6735
105	7	6098	6517

TABLE 3 *S. pneumoniae* - Putative coding regions of novel proteins not similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)
106	1	1	363
106	10	9832	10212
108	1	2	268
111	3	3417	3788
111	4	3809	4606
115	10	10854	10438
116	3	2873	2121
118	2	2274	1357
122	4	2698	2333
122	10	5858	6199
122	12	6301	7416
124	2	346	690
128	4	2544	3368
129	1	689	102
129	2	1011	724
129	8	6454	6056
129	9	6540	6277
129	12	7809	7621
131	3	1433	756
131	10	5972	5673
134	11	11838	11209
135	2	625	1140
136	4	2913	3830
137	2	325	134
139	12	14027	14521
139	13	14840	14532
139	14	15363	14875

TABLE 3

S. pneumoniae - Putative coding regions of novel proteins not similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)
140	20	19822	20838
142	1	1	285
146	3	760	479
146	4	1149	778
146	7	3604	2885
146	13	8223	9401
146	14	9399	10676
146	15	10052	9750
147	7	7488	7276
147	9	8913	8647
148	7	5298	4765
149	1	2	1936
149	3	2557	2880
149	9	6258	6070
150	2	1355	579
150	3	2556	1909
153	3	2061	2642
154	3	1953	1741
155	2	2181	1411
156	8	4550	4311
157	1	37	294
159	2	631	780
159	4	1384	1722
159	7	3271	4017
161	2	1332	1018
165	3	5535	4945
166	6	5406	4972

TABLE 3

S. pneumoniae - Putative coding regions of novel proteins not similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)
167	9	6075	6395
169	5	2828	3205
170	7	6485	6243
170	8	6964	6362
170	9	7303	6962
170	11	8790	7906
171	9	7150	7476
172	5	2298	1948
173	4	2913	2677
175	2	659	835
175	3	893	1789
176	2	1487	546
176	3	2200	1466
177	9	4686	4925
177	10	4923	5177
177	11	5111	5347
177	13	7396	8703
178	6	3452	3724
181	5	1853	2473
182	2	2112	1102
182	3	2617	2006
183	2	2126	2320
185	5	4683	4219
185	6	4846	4634
187	4	2940	3557
188	4	3686	4363
188	5	4183	4821

TABLE 3

S. pneumoniae - Putative coding regions of novel proteins not similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)
188	6	5882	6493
189	5	3143	2844
189	9	5956	5564
191	1	618	4
191	11	10357	10001
192	3	2861	2268
192	4	3081	2878
192	7	6800	5331
193	3	997	839
194	4	2315	2127
195	5	6249	4543
195	6	6620	6231
196	2	1553	1849
197	1	1	861
198	9	6844	6644
200	5	5329	5769
200	6	5993	6595
204	5	3914	3276
205	2	447	1709
209	4	2038	2460
209	5	2458	2682
210	10	7370	8230
210	13	9029	10441
210	14	10439	10705
214	5	2581	2330
214	9	5065	5277
214	11	5996	5754

TABLE 3

S. pneumoniae - Putative coding regions of novel proteins not similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)
217	2	541	194
218	2	914	1432
218	3	1430	1972
218	6	3639	3821
219	1	458	39
220	1	869	600
223	4	2617	1964
227	1	1	510
234	4	1539	1312
234	6	2116	1838
235	1	52	312
235	2	310	687
238	1	660	64
246	1	1	270
248	1	3	362
248	2	443	1222
254	3	2789	792
258	2	1179	1616
260	3	1770	2123
263	1	653	177
263	4	2244	1900
263	5	3569	2973
266	1	1	342
266	2	177	1022
270	2	1124	1681
272	1	857	186
275	2	1684	2295

TABLE 3

S. pneumoniae - Putative coding regions of novel proteins not similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)
278	1	2	406
282	1	714	391
282	4	1463	1134
287	2	1119	826
288	1	540	4
289	1	684	4
291	5	1589	1858
293	2	2539	2925
294	1	21	608
296	2	494	700
296	3	670	843
302	1	261	530
309	3	559	350
310	2	249	1889
316	2	2087	1818
317	2	1048	584
318	2	313	777
319	3	477	133
327	2	912	607
331	1	1	549
333	1	2	535
333	2	465	82
333	3	127	342
341	1	1	705
345	2	895	701
346	2	750	199
349	1	1	198

TABLE 3

S. pneumoniae - Putative coding regions of novel proteins not similar to known proteins

Contig ID	ORF ID	Start (nt)	Stop (nt)
350	2	81	413
355	1	44	973
358	2	636	448
360	2	948	628
364	2	1639	1265
378	1	345	1004
379	2	683	510
381	1	109	693
385	1	150	4
385	2	269	30

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(1) GENERAL INFORMATION:

(i) APPLICANT: Charles Kunsch
Gil H. Choi
Patrick S. Dillon
Craig A. Rosen
Steven C. Barash
Michael R. Fannon
Brian A. Dougherty

(ii) TITLE OF INVENTION: Streptococcus pneumoniae Polynucleotides and Sequences

(iii) NUMBER OF SEQUENCES: 391

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Human Genome Sciences, Inc.
(B) STREET: 9410 Key West Avenue
(C) CITY: Rockville
(D) STATE: Maryland
(E) COUNTRY: USA
(F) ZIP: 20850

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Diskette, 3.50 inch, 1.4Mb storage
(B) COMPUTER: HP Vectra 486/33
(C) OPERATING SYSTEM: MSDOS version 6.2
(D) SOFTWARE: ASCII Text

(vi) CURRENT APPLICATION DATA:

149

(A) APPLICATION NUMBER:

(B) FILING DATE:

(C) CLASSIFICATION:

(vii) PRIOR APPLICATION DATA:

(A) APPLICATION NUMBER:

(B) FILING DATE:

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Brookes, A. Anders

(B) REGISTRATION NUMBER: 36,373

(C) REFERENCE/DOCKET NUMBER: PB340P1

(vi) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: (301) 309-8504

(B) TELEFAX: (301) 309-8512

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(2) INFORMATION FOR SEQ ID NO: 1:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 5625 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

CCAAGCAAAA CCAGCTACAG CTAAAGGAAC TTACGTAACA AACTTGACTA TCACAACCTAC	60
TCAAGGTGTT GGTATCAAAG TTGACGTAAA CTCACCTTAA TCAGTAGTTA AAGTAATGTA	120
AAAAAGTTGA AGACGCTATG TCTCAACTTT TTTTGATGTA CGACGGGCAT GTTGTATAGT	180
AGATGTGTAC TATTCTAGTT TCAATCTACT ATAGTAGCTC AGAAGTCGGT ACTTAAACGT	240
GCTATATCAA AACCAGTCCT TGAAAAACGT GGACTGGTTT CGTGTGTTGA TTATTACCTT	300
GAACGACATG CGTTAAAAGT TAGTTGAACC GCCGTATGCC GAACGGACGT ACGGTGGTGT	360
GAGAGGGGCT AGAGATTATC CCCTACTCGA TTTCGAAATC TAGTGGAATG AATCTGGAAT	420
AGTCCATCGA GCTTTCTAAT ACTCTTCGAA AATCTCTTCA AACCACGTCA ACGTCGCCTT	480
GCCGTGCGTA TGGTTACTGA CTTTCGTCAGT TCTATCCACA ACCTCAAAAC AGTGTTTTGA	540
GCTGACTACG TCAGTTCCAT CTACAACCTC AAAACAGTGT TTTGAGCAAC CTGCGGCTAG	600
TTTCCTAGTT TGCTCTTTGG TTTTCATTGA GTATAACACA TTGTTAGAAG TTGGTTTTAA	660
TTTCCTAATC AGTTTGTTCA CATTTACCTT CGATATATTA TATCCCATAG TTAAGGTTGG	720
TCATACAGAT GATTATAGTC ATGGAGCCGT AAAACTTAGT GTTCTTTAG TTGACAAAGA	780
TGCCATGAAA AAAATATTTG TAACTGTAAT AGGATATTTT GAAATAAATA TAGATGAAAA	840
TATCACCGAT ATTCTATACG TAAATGGTAC TGCTATTCTT TATCTTTATT TACGTTCAAT	900
TGTTTCAATA GTTTCGGCAA TTGATAGCAG TGAAGCAATG TTGCTACCTA TCATTAATGT	960
TTTAGAGTTA CTAGATAAAT CTCAACCTTT TGAAGAAGAA TAATTTATTA GCTCACTAAA	1020
TTGAGGGTAA GGAAAAGTAA AAGCAGTAAG AAAAATGTCT TGCATTATAC AGCAACCTTT	1080
TGGGAATGAG TGGATGGATT GAATAAAATT TGATTAAGAG TGGATGATTT ATCTGTAGAT	1140
TATTATTGGA CAGTTAGTCT TGAAGTAGTC TAAGAATTAG GTTATAATCA GTAGAAGCCT	1200
TGCTAATAAT GAGGAGGTTA GTTTATGTAT AGTAGACTGA ATCTAAAATA GTACGAAACA	1260
ATTGCTAAAA CATTTATAGA AATTAATTTT ACTTTCCCAA TCGATTGTGT CTCATCTTAT	1320
TTCAATCCGC TATATATTAT GGTATCGAAT CTTTCATCAGA ATGATAAAAT TAATCAATTG	1380
ATATCTGATT ACAAACAGAA TATGAAAGCT TTTTATATCA CTATTGAAAA ATTTATACGA	1440

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GATGATGAAA GCCTTAAGTG TTATTTTATA AAGGTTATTT CAAGTCGTTT CAAGGTAACA	1500
AGTCTAGATC AGATTGAAGC TGATAAAACG ATACAAAGAA AATATTCAAG TGAGCTAAAA	1560
AAATTTATTG GATTTTATAA TGAGATTATT TGTGAGGAAA ATAGTTTCCT ACATGTACGA	1620
AAGAGGTGGT CGAGTTGGTT TAGGTAGTCG ATGCGTGAGT TGATAATTCT CAGGGTATGG	1680
ACTTCTTTTT CATGAATGAG GTAAAAGAGC AGGTATTGTT TAGAGACAAT CATTCTGAGC	1740
ATATTTTCTG GATAGAGGGA GTATCCGATT TTATGATCAA AGTTAATACC GCCCTCTGGT	1800
GAGAAGATGA GTAGGTTGGT AATTTAACT ATTAACAGA ATTTTGTATT AAAAGTATTA	1860
TTTCATGAGA GAAATCCTAA TTTCACAATC CATAGGCAAA CGCTTGCATT TCGTTTTTTA	1920
TTGGACTATA ATAGGTTGGT ATAAAGCCTT CTGTAGTAAT AAAATGTAGA AGGTGTAGAA	1980
AGTAAGGATT TAGAATATTT GTAGTTAAAA ACACAATGTT GCTATTCCTT ACGATAGGGA	2040
GATAGATATG GCAATGATAG AAGTGGAACA TCTTCAGAAA AATTTTGTGA AGACTGTTAA	2100
GGAACCGGGC TTGAAGGGGG CTTTGCCTC CTTTATTCAT CCTGAAAAGC AGACCTTTGA	2160
AGCGGTCAAG GATTTGACCT TTGAGGTTC AAAAGGCGAG ATTTTAGGAT TTATCGGGC	2220
AAATGGTGCT GGAAGTCGA CAACCATTA AATGCTGACA GGAATTTGA AACCAACATC	2280
TGGTTTTGT CGGATTAACG GCAAGATTC CCAGGACAAT CGGCAAGATT ATGTCAAAGA	2340
TATTGGCGTA GTCTTTGGAC AACGCACCCA GCTATGGTGG GATTTGCTC TGCAAGAGAC	2400
CTACACTGTC TTAAGAGAGA TTTATGATGT GCCAGACTCG CTCTTTCATA AGCGTATGGA	2460
CTTTTGAAT GAAGTCTTG ATTTGAAGGA CTTTATCAAG GATCCCGTGC GGAATCTTC	2520
ACTGGGACAA CGGATGCGGG CGGATATTGC GGCCTCCTTG CTCCACAATC CCAAGGTTCT	2580
TTTTTTAGAT GAGCCGACCA TTGGTTTGA CGTTTCGGTT AAGGATAATA TTCGTCGGGC	2640
AATTACTCAG ATCAATCAAG AGGAAGAAAC TACCATTCTT TTGACCACTC ACGATTGAG	2700
TGATATTGAG CAACTTTGTG ATCGGATTT CATGATTGAC AAGGGGCAAG AGATTTTGA	2760
TGGAACGGTG AGCCAACTCA AGGAGACCTT TGGTAAGATG AAGACTCTCT CTTTGAAC	2820
GCTACCAGGT CAAAGTCATC TCGTCTCTCA CTATGACGGT CTGTCTGATA TGACCATTGA	2880
TAGACAAGGA AACAGCCTCA ACATTGAATT TGATAGTTCT CGCTACCAGT CAGCTGACAT	2940
TATCAAGCAA ACCCTGTCTG ATTTTGAAT CCGCGATTTG AAGATGGTGG ATACGGATAT	3000
TGAGGATATT ATCCGTCGCT TCTACCGAAA GGAGCTCTAG GATGATCAAA TTGTGGAGAC	3060
GTTATAAACC CTTTATCAAT GCAGGGGTT AGGAGTTGAT TACTTACCGA GTCAACTTTA	3120
TTCTCTATCG GATTGGCGAT GTCATGGGG CTTTGTGGC CTTTATCTC TGGAAGGCTG	3180

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TCTTTGATTC TTCGCAAGAG TCTTTGATTC AGGGCTTCAG TATGGCGGAT ATCACCTCT	3240
ACATCATCAT GAGTTTGTG ACCAATCTTC TGA TAGATC CGATTTCGTCC TTTATGATTG	3300
GGGAGGAGGT CAAGGATGGC TCCATTATCA TGC GTTTGT GCGACCACTG CATTTTGCGG	3360
CCTCCTATCT TTTCACCGAG CTTGGTTCCA AGTGGTTGAT TTTATCAGC GTTGGCCTTC	3420
CATTTTAAAG TGTCATTGTC TTGATGAAAA TCATATCGGG TCAAGGTATT GTAGAGGTGC	3480
TAGGATTAAC TGTCATTAT CTTTTAGCT TAACGCTCGC CTATCTGATT AACTTTTCT	3540
TTAATATTG CTTTGGATT TCAGCCTTG TGT TAAAAA TCTTTGGGT TCCAACCTAC	3600
TTAAGACTTC CATAGTGGCT TTTATGTCGG GGAGTTTGAT TCCCTTGGA TTTTTCCAA	3660
AGGTGTTTC AGATATTCTC TCCTTTTGC CTTTTCATC CTTGATTAT ACTCCAGTTA	3720
TGATCATTGT TGGAAAATAC GATGCCAGTC AGATCTTCA GGCCTCCTT TTGCAGTTCT	3780
TCTGGCTCTT AGTGATGGTG GGATTGTCTC AGTTAATTG GAAACGGGTC CAGTCCTTA	3840
TCACCATTCA AGGAGGTTAG TATGAAAAA TATCAACGAA TGCATCTGAT TTTATCAGA	3900
CAATACATCA AACAAATCAT GGAATATAAG GTAGATTTG TG GTTGT CTTGGGAGTC	3960
TTTCTGACTC AAGGCTTGAA TCTCTGTTT CTCAATGTCA TCTTCAACA TATTCCATTC	4020
CTAGAAGGCT GGACCTTCA AGAGATAGCT TTCATTTATG GATTTTCCTT GATTCCCAAG	4080
GGAATGGACC ATCTCTTTT TGACAATCTC TGGGCACTAG GGCAACGCCT AGTCCGAAAA	4140
GGGGAGTTG ACAAGTATCT GACTCGTCCC ATCAATCCTC TCTTTCACAT CCTAGTTGAA	4200
ACCTTTCAGA TTGATGCCTT GGGTGAATC TTAGTCGGTG GTATTTTATT GGGAACAACA	4260
GTGACCAGCA TTGTTGGAC TCTTCCAAA TTCCTGCTT TCCTAGTTG TATTCTTTT	4320
GCGACCTGA TTTATACTTC TCTTAAATC GCAACAGCCA GTATCGCCTT TTGGACTAAG	4380
CAGTCAGGCG CCATGATTTA CATCTTCTAT ATGTTCAATG ACTTTGCTAA GTATCCGATT	4440
TCTATTACA ATTCTTCT TCGTTGGTTG ATTAGCTTA TCGTGCCTT CGCCTTACA	4500
GCCTACTATC CAGCTAGCTA TTTCTTACAG GAAAAGGATG TGTCTTTAA CGTAGGAGGT	4560
TTGATGTTGA TTTCTCTGGT TTTCTTGT ATTCCCTTA AACTTTGGGA TAAGGGCTTA	4620
GATTCCTACG AAAGTCGGG TTCGTAAAAG CTAAAGTAAG ACTAAATCA AGAAAGAAAC	4680
TTATGATGTT TGTAAATGAA GAAGTCAAGG ATGAAAATCA AAAAAAGGCA GTTGTCGCTG	4740
AGGTTTGAA GGATTGCCA GAATGGTTG GAATCCCAGA AAGCACACAA GCCTATATAG	4800
AAGGAACCA GACACTGCAA GTTGGACCG CCTATCAGGA GAGTGATTG ACTAGATTG	4860
TAAGCTTATC CTATTCGAGT GAAGATTGTG CAGAGATTGA TTGTCTCGGC GTAAAAAGC	4920
TTATCAAGGT AGAAAAATTG GGAGCCAATT GCTTGCTACT TTAGAGAGTG AAGCTCGTAA	4980

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AAAAGTTGGT TATCTGCAGG TCAAAACAGT GGCAGAAGGT TCTAATAAAG ATTATGATCG	5040
AACAAATGAC TTTTATCGAG GTCTTGGCTT TAAAAAGTTA GAGATTTTTC CTCAACTATG	5100
GAATCCGCAA AATCCTTGTC AGATTTTGAT TAAAAAGCTT GAATAATATT ACTTGACATC	5160
TATTCTCAGA GTGCTATACT GTAAGTGTA TCGCCGATTT AGCTTAGTTG GTAGAGCAAG	5220
GCACTCGTAA AGCCTAGGTT ATAGGTAGAT AAACGACTGA GGATTTGAAA AAATAGATAG	5280
GTAGAAGATA ACCGTTAAGC CTTACTCTTA GCGGTTATTT ATATTGTTTA ATAGCGCTAA	5340
TATTTTATCA ATTATGCCTG TTTTCGTGTT TCTGGTAGTT GTTCAAGTTT ATTGCTACTA	5400
TTTTTGATGG TATGAATGTG CTTATAATGT ATCCCGGTTA ACGAAAGTTT TGGACTTATA	5460
CTCTTCGAAA ATCTCTTCAA ACCACGTCAA CGTCGCCTTG CCGTGCCTAT GGTATGACT	5520
TCGTCAGTTC TATCCACAAC CTCAAAACAG TGTTTTGAGT GACTACGTCA GTTCCATCTA	5580
CAACCTCAA ACACTGTTTT GCCCAATCTG CGGCTAGTTT CCTAG	5625

(2) INFORMATION FOR SEQ ID NO: 2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7571 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

CTCTCCAGCT TTCCTTGCGA GTTGGCCATG TTGTGTCTTT AAGAAGTCTA AAAATATCTC	60
CAATAAAACG CATCGCTCTC TCCTATCTCG TTTCTCTGTG TGTAAGTGTAC TTGCCACAAT	120
GCTTACAAAA TTTATTTACT TCTAGTCGTG TAGGCTTGAG GTTTCCGCTG ATCTTGATTG	180
AATAGTTTCT CGAACCACAA ACCGCACAAG CTAGGCTTGC TTTTTTGTAGT GCCATAACGC	240
CTCCATCTTA TCCATTATAA CAAGAAAGCT AGGCTTTGAC AAGCATCTTA GCGAAATAGA	300
TTGACTATCG AATCCCATAT TGTTTGAGCC TTTTCCTTAA TCTTCGCATC TGAGATAGCC	360
CGGCTAGCCT CATCTACTAG ACTTTGCGCA CGCCCTCGAA TATCAGACAA ATTATCATCT	420
GTCTGGCTAT TATCATTGGT TTGTACTTGT CTTTTTGTAT TGGCTGGTGC AATTCCATTT	480
TGCTTATAAG CATTTTCAAC CGTAAAGGTA CTTCTGGCG TATAAGGTAA AATGGTATTG	540
GCAATGTTTC TAAAGACATG AGCTGCACCG TTTGAAGTAG AGCCAGCTAG ATAGTGGTTT	600
TCATCAGTGG TCGGAAAGCC AAGCCAGTGG CTAATCACTA CATCCGGAGT ATAACCAATT	660
ACCCACTGGT CACTTGTGTA CTCGCGATTG AAAACTGCTT CAGTTGTTCC AGTTTTCCCT	720

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GCCATGACAT AGTCTGCAGG CGATGAACTA ATACCGGTAC CGTTGGTGAA AGTCCCCAAC	780
ATCATACTGG TCATCTTGTC AGCTACAGAC TTATCAATCA CCCGTTTTTG TGAATTTTTA	840
TGACTCGCAA TAACTTGTC ACTAGCATT TCAATTCTAC TAATAAAATG AGCTTCAGGC	900
ATTAAACCTT CATTTGCAAA GGCGGCGTAT GCTTGAGCCA TTTGAAGAGG GTTGGTTTCA	960
ACACCGCTTC CCAAGGCGAC ACCAAGAACA CGGTCGACCT TTTCCATGTT GAGTCCGAAT	1020
TTTTCGCCTG CCTCAAAAGC CTTGTGACA CCCAAATCAT TAACAGTGGC AACAGCAGGT	1080
AGATTAAGCG ATTCTGCCAA GGCTTGATAC ATAGGAACTT CTCGACTCGT TTTGATCCCT	1140
GCATAGTTAT CAACCTTATA GCTGTCATAC TGCATGGTAT GGTTATCCAA CTGCTTATTC	1200
AAAGCCCAGC TTGCTTCAAC TGCTGGCGTA TAAACAATA AAGGCTTAAT TGTAGAACCA	1260
GGACTACGCT TTGATTGGGT TGCATAGTTG AAATTCCGGA ATCCAGTTTT ATCATTTGTCA	1320
GCAACTTGAC CGACAACTCC ACGAACTCCC CCTGTTTTCG GTTCGAGGGC TACACTTCCT	1380
GATTGAGCAA ACGTTCCATC CTCTGCCCTC GGAAATAGCG ATGTGTTTTT ATAAACAATC	1440
TGCATATTTG CTTGGTAGTT TTGGTCCAGC TCTGTGTAAT TGCGGTAGCC ATTATGACA	1500
ATCTCTTCCT CTGTTAGATT ATACTTGAA ACAGCTTCAT TAACCACCGC ATCAAAATAA	1560
GAGGGTAAC GGTAATCTGA GATTTTCCT TCATACTTAT CGTGCAATTG CGAAGTCATA	1620
TCAACTTCAG CAGCTTTGGT TTCTTGTTTT TTATCAATAT ATCCTGCTGC AACCATATTC	1680
TGCAAGACAG TATCGCGCCG ATTAGTAGAA TCTTCTACGG AATTCAAGGG ATTATACAGT	1740
TCCGGCCCCC TGAGCATCCC TGCCAGAGTC GCAGCTTGAT CCAGACTCAC TTCTGATGCA	1800
GAAACTCCAA AGTATTTCTT ACTCGCATCT TCTACACCCC ACACACCATT TCCAAAATAA	1860
GCGTTGTAA GGTACATGGT TAGAATTTGC TCCTTACTAT ATTTTTTGCT TAATTCTAAG	1920
GCAAGGAAAA ATTCTTTCGC TTTTCTCTCA ACAGTTTGAT CCTGCGATAA ATAGGCGTTT	1980
TTAGCCAGCT GTTGGGTAAT GGTAGAGCCA CCACCTGAAC GTCCAGCAGT GACAAATAGCC	2040
AAGAAAAAC GGCCATAGTT AATCCCGTCA TTTTATAGA AAGAACGGTC TTCTGTCGCA	2100
ATAACAGCAT TCTGCAAGTT TTTACTGATG TCAGTCAGCT CAACATAGGT TCCCTTTTGA	2160
CCAGACAAGG CACCAGCCTC TTTTCTTCA CGGTCAAAAA TAAGAGTCG AGTTTTCAG	2220
GCATTTTGCA AATCATTGAC ATTGGTCGAC TTGGCTACAG CAAACAAATA GATTCCAAC	2280
AGCAAGCCTG CACTCAAACC TAGTATAAGG ATAATCTTTG TTAGATGATA ACGACGCCAG	2340
AATTTTCGAA TCGGACCTAC TTGGGCTAAT TTTTTCGAT CACTACGAGA GCGACGTAAG	2400
ATAGTAGAAT CAGAGTCCTC TAGTTCACTT GTTCTTTTTT TAAAAAGAGA AAGAAATTC	2460
TCAAATAATT TATCTAATTT CATGCGTTTA TTTATCATC TTCATCATAG GAAGACAAGA	2520

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ATTTACATTA CCCGCCTCTC TACCTCAAAT GACAGTAAAG CAATTACTTG AGGAACAACT	2640
CCTCATCCCT AGAAAAATCC GTCATTTTTT GAGAATCAAG AAACATATTT TGATAAACTA	2700
AGAAGAAGTC CACTGGAAGG AAATCGTAAA TCCTGGAGAT GTTTGCCAGT TGACTTTTGA	2760
CGAGGAAGAT TATTCCTAAA AGACGATCCC TTGGGGCAAC CCAGACTTAG TGCAGGAAGT	2820
TTATCAAGAT CAACACTTGA TTATTGTAAA CAAACCAGAG GGGATGAAAA CGCATGGTAA	2880
TCAACCAAAC GAAATTGCCC TTCTTAACCA TGTCACTACC TATGTTGGCC AAACCTGCTA	2940
TGTCGTTTAT CGTCTGGACA TGGAAACCAG TGGCTTAGTT CTCTTTGCCA AAAATCCTTT	3000
TATCTGCCC ATTCTCAATC GCTTATTGGA GAAAAAGAG ATTTCTAGAG AATATTGGGC	3060
TCTAGTTGAT GGAAATATCA ACAGAAAAGA ACTTGTTTTC AGAGACAAAA TTGGACGTGA	3120
TCGCCATGAT CGTAGAAAA GAATAGTTGA TGCAAAAAAT GGGCAATATG CTGAAACGCA	3180
TGTAAGCAGA TTAAAGCAAT TCTCAAACAA GACTTCCTTG GCTCATTGCA AGCTAAAGAC	3240
AGGGCGAACC CATCAGATTC GTGTGCACCT TTCGCATCAT AATCTTCCTA TCCTGGGAGA	3300
CCCTCTCTAT AATAGTAAAT CAAAGACAAG CCGGCTTATG CTTTCATGCCT TCCGACTTTC	3360
CTTTACCCAC CCACTTACTT TAGAGAAGCT AACTTTCACT ACCCTTTCAA ATACATTTGA	3420
AAAAGAATTA AAAAAGAATG GATGATCGTG TCATCCATTT TTCCATATAA AAAAGCAAGA	3480
CCACAAAGCC TTGCTTTCTA TCAACTCAAG AATTATTTAG CAATTTTTCG GAAGTATTCA	3540
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TAAGACATAC CTACGATATC TGAAGATACG ATTGGATCTT CTGTGTAACC GTATGATTCTG	3720
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GCTACCAATT CAGTAACTGA TCCAGTTGGA GTTGGAACGC GTTGTGCAGA TCCGTCAAGT	3840
TTACCATTCA ATTCTGGGAT TACAAGACCG ATAGCTTTTG CAGCACCAGT TGAGTTAGGA	3900
ACGATGTTTG CAGCACCAGC GCGAGCACGG CGAAGGTCAC CACCACGGTG TGGTCCGTCA	3960
AGGATCATTT GGTCAACAGT GTAAGCGTGG ATAGTAGTCA TCAATCCTTC AACAAACCA	4020
AAGTTGTCTT GAAGAGCTTT AGCCATTGGA GCCAAGCAGT TTGTAGTACA TGAAGCACCT	4080
GAGATAACTG TTTCACTACC GTCAAGAACG TCGTGGTTAG TGTGAATAC AACTGTTTTA	4140
ACGTCGTTTC CACCAGGAGC AGTGATAACA ACTTTTTTAG CTCCACCTTT AAGGTGTTTT	4200
TCAGCTGCTT CTTTCTTAGC AAAGAAACCA GTAGCTTCAA GAACGATTTT TACACCGTCA	4260

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GTAGCCCACT CGATTTGTTC TGGATCACGT TCAGCAGAAA CTTTGATGAA TTTACCGTTA	4320
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TATTTCAACA AGTGTGCAAG CATAACTGGA TCTGTAAGGT CGTTGATGCG TGTAACCTCA	4440
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TGAGTTGAAT TGCAAGTATG GCCATTGTTT TTCTATGTGA GTTTCTTTTT AAGACTGTAA	4680
ACCAAGGAAT CCCTTACTAT TCATAGCATA ACGATTCTAT AGGATCCATT TTACTAATCT	4740
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AGATAAAATA AGATACAGCT TTCGTAAATC CAGCCTCTTT CAAAATCGTT TCCATTTGAT	5280
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TCTTCGTTTG AAATTGAGCA ATCTTACTAG TTTCCGCAGC ACTTCTACA ATGCTGGCTG	5400
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TTTTTAGTAA ACTGCTTGGA ATCGTTAATC CCTGTTTATT TGTATCAGTA TAGAGGGATC	5520
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TCCTACTTG AGCATAAGAA GGCATCGTTT GACTCAGATC CATTTCTTGC CCATCTATAG	5640
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TAGGATTGTA CTCAGGCGAG TAGGGAGGAA GAGGTAAAAG TTTATGCCCA AACTCTTCGC	5880
ATAAAAGTTC TAGCTTCCCC ATTCTATGGA ATCTTACATT ATCCATAATA ATAACCGATG	5940
GTGTGTTTAA TGTGGTAAG AGAAAATTCT GAAACCAAGC TTCAAAAAAG TCGCTCGTCA	6000
TCGTCTCTTC GTAAGTCATT GGAGCGATTA ATTCACCATT TGTTAGACCT GCAACCAAAG	6060

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AAATCCTCTG ATATCTTCTT CCAGATACTT TGCCTCTTAT TAATTGACCT TTTAATGAGC	6120
GACCATATTC TCGATAAAAA TAAGTATCGA ATCCTGTTTC GTCAATCTAA ACAGGTGCTA	6180
GGTGCTTTAA ACTATTAAAA TTCTTAAGAA ATAAGGCTAC TTTTCTGGG TCTTGTTTCA	6240
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TTGGATGACA GCCAAATTC AAGCTATTT CAGTCAAATA AGCGTCTGGA TTGTCAGTAA	6360
GATAGTTTTT AAGTCTATCT CTATCAACCT TTCTTGTTTT TATTCCTTTT ACTTGGTGGT	6420
TTAGCTCTCC TGTTTTCTCT TTTAGCTTTA ACCAGCCATA AATGGTATTA CGTGAGATTT	6480
GGAAAACGTG TGATGCTTCT GTTATACTAC CTGTTGCTC ACAATAAGAG AGAACTTTTT	6540
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AAGACATCCT TAAAAAGTT AGTTTATTTT ACAACTTAGA CATCAAGGTA GGTAAACCCC	6720
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TCCCCATCCT TAAATTGATG AGGATTCTGG AAGGTCACCT CGGCATCAAA TAGGGTAAAA	7380
ACCCTTTGAA AAACGGTTAG CCCCGCTAAA ACACCAGCTT CCTTGGCAAA AAGCGACACC	7440
TTGGCTTGGC CATGATGATC AAAAATGGCA TTGGTACTGT AATCTTCGGA ATGAACATCT	7500
TCTCGCAAGG CTGCTTTCAA TGTATCATCT ATTTGAAAAG GGGTTAAATC AGTTGAAATG	7560
ATTGACATCA C	7571

(2) INFORMATION FOR SEQ ID NO: 3:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 26385 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double

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(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

TTTGCTAGTG GCTTAAATTC TTCAGGAAAA TCAGGCGTAT CTAAAAGTCG TGTCGTTTTT	60
GTTTCATCTA TATAAAGACT TCCTGCTCCC CCTACAATA GAAACGTGT CTGTGTTCCA	120
GCAAGAAGCT GATTAAATAG TTCGATTGAT TTGCTGTGGA GCGGTAGCGT ATCTGGTGTA	180
TAAGCACCAA ACGCTGAAAT AACAGCATCA AATCCAGTAA GATCATCTTT TGTCAACTCA	240
AATAAATCTT TTTTAATAAT AGACTCAGCT TGACTTTTGT TTTCAGAACG AACAAATAGCC	300
GTTACTTCAT GTCCTCGTTT GACTGCTTCT TCAACAATTG CTTTCCCCGC TTGTCCATTT	360
GCTGCAATAA CTGCTAGTTT CATTTTTTAT ACCTCTCTTG TTGTAATTAT TTTAGTTACA	420
GAAATGTGA CACTCTTAAT AATCAATGTC AATAGTCTTG CTTAATTATT ATCAAAATAT	480
TTCTACCAAG AAAACTAACC ATGATTCTAG TGAAAAAAA TCTTCTTTGT CAACAAATTT	540
ACTTCTTGT TTTAAACATG CTATAATAAT CATAGCAAGA GATCTAAGTT GTCTGTTTTT	600
TTAAACGAG GTGATTATCA TGCGTAGATT CTATTCCCAT CTCCCCTACT ATCTGGTCAT	660
ATTATCTTT TATTGGCCAC TTTATGAGTT GTTCTTACTA GTTGTTTCTG ACCCCCTTAC	720
ACTCAAGGGA CTCTATATAA ACAATCTTCT CTCTTTTACA CCTCTGGTAA TCTTGATTGT	780
ATCGTTACTC TATAGCTACC GTTCCGTTT CTCACTTTGA TGGTTAGTTG GTAACGGACT	840
GCTCTTTTAC TTTACTATCA TAACCTTTGG TGAGTTTATA CTAATTTACT TGCTAATCTA	900
TGAAACAGTT GCTCTGGTCG GCATGGATTC TGGTATTAGC ATCAAGCATA TTCTACAAAA	960
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CTGGTAAATT CAACGGCAAA CTCATCGACA CTACTCGCGC TATCACTGAA GATGGAAGCA	1800
TCGAAATTGT GACACCTGAT CACGAAGATG CCCTTCCAAT CTTGCGTCAC TCAGCAGCTC	1860
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CCATCGAAGA TGTTTCTAC TACGATACTG ACAACACAGC TGGTCAAATC TCTAACGAAG	1980
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AACACGTGGA CTACGCTTGG GAAGTGCCA AGAACTCCG TGACCGCGGT GTCCGTGCAG	3360

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TATCCTGAAA AGCCACGTC AAATACTCGG AGGACATCAC TGTTTTTTAT CCCGATTCCC	3840
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TACTTGAGAC TGTTTGAGAT GATTTGCTCA ATAACCACTA GCAGCCACTT TTTATCCGTC	3960
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CATGATAGGT ACCTTGGAAT TCTTGCGGAT TTCCTGACAC CAGTGATAAC CATTAACAA	5100
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TTCCAAAATG AACTATAAA GGCTAATACA ATTCCTATAA CGAGATACAT TTCTTACTCC	6900

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TAAC TCCCGA TCGCAGCCCT CTTTCTGAGC CAATTCTCTC AAAAATTCCT GATGATGAGT	7560
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TATCGTAAGC ACCGCTTGAT TGAAGTTTT CTAGTTCATC ATTTAGACTA TACAAGTGAC	8700

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ATTCGTCAAA GGTCTTGAAA AAGCAACTAG CTGGATTAAA GACAATTTGA TCAATAATGG	21720
TTCACAATTT GACGGTGGGG CAGATATCCA AAAGTTTGGC AACGGTCAAA CATCTTACAC	21780
AATCCTTTGG GCACCAGCTC AAAATGGTAT CCAAGCTAAA CTTTTAGAAG CAAGTAAGGT	21840
AGAAGTGGTA GAAGTACCAT TCCCATCAGA CGAAGGTAAG CCAGCTCTTG AGTACCTGT	21900
AAACGGGTTT GCAGTATTCA ACAATAAAGA CGACAAGAAA GTCGCTGCAT CTAAGAAATT	21960
CATCCAGTTT ATCGCAGATG ACAAGGAGTG GGGACCTAAA GACGTAGTTC GTACAGGTGC	22020
TTTCCCAGTC CGTACTTCAT TTGGAAAACT TTATGAAGAC AAACGCATGG AAACAATCAG	22080
CGGCTGGACT CAATACTACT CACCATACTA CAACACTATT GATGGATTG CTGAAATGAG	22140
AACACTTTGG TTCCCAATGT TGCAATCTGT ATCAATGGT GACGAAAAAC CAGCAGATGC	22200
TTTGAAAGCC TTTACTGAAA AAGCGAACGA AACAATCAAA AAAGCTATGA AACAATAGTC	22260
CTTAGTTATT CTATAAAAAG TAGTTTTTTA AAGAACCTAA GAGTGTATAC CCCCTTTTCC	22320
CTCTACACAG ATAGTGTAAG AAAAGGGGGC TTTTGTTTAA AATGTAAGAA ACTGTCACGA	22380
AATTAAAATG AAGTTCTTAC ATAAGCGAAT CATAAAAAAT TTCATTTTGA TTTTAAAACA	22440
GTTCAAGAAA GTCAAAAAAT TATCTATTT GAAAGAGAGG TGCCGACTGT GAAAGTCAAT	22500
AAAATCCGTA TGCGGGAAAC AGTGATTTC TACGCTTTCC TAGCACCAGT ATTATTCTTC	22560
TTTGTCATCT TTGTGTTGGC TCCGATGGTG ATGGGCTTCA TTACAAGTTT CTTTAACTAC	22620
TCAATGACTA AATTGAGTT TGTAGGCTTG GATAACTATA TCCGTATGTT TAAAGATCCT	22680
GTCTTTACAA AATCTCTGAT TAACACAGTT ATTTTGTTA TTGGATCTGT ACCAGTTGTT	22740
GTTCTATTCT CACTCTTGT AGCATCTCAG ACCTATCATC AAAATGTCAT TGCCAGATCC	22800
TTCTACCGTT TCGTCTTCTT CCTTCCTGTT GTAACGGGTA GTGTTGCCGT GACAGTTGTT	22860

TGGAAATGGA TTTATGACCC ACTATCAGGG ATTCTAAACT TTGTCCTTAA GTCCAGCCAC	22920
ATCATCAGCC AAAACATTTT TGGTTGGGA GATAAAACT GGGCATTGAT GCGGATTATG	22980
ATTATCTCT TGACCACTTC AGTTGGTCAG CCCATCATCC TTTATATCGC TGCCATGGGG	23040
AATATTGACA ATTCACTGGT TGAAGCGGCG CGTGTGATG GTGCAACTGA GTTTCAAGTT	23100
TTTTGGAAGA TTAATGGCC AAGCCTTCTT CCAACAACCTC TTTATATTGC AATCATCACA	23160
ACAATTAAC CATTCAGTG TTTGCGCTTG ATTCAGCTTT TGACATCTGG TGGTCCAAAC	23220
TACTCAACAA GTACCTTGAT GTACTACCTT TACGAAAAAG CCTTCCAATT GACAGAATAC	23280
GGCTATGCCA ACACAATTGG TGTCTTCTTG GCAGTCATGA TTGCTATCGT AAGCTTTGTT	23340
CAATTTAAAG TACTTGGAAA CGACGTAGAA TACTAAAGAA AGGAGACAGC TATGCAATCT	23400
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ACTGTGCTGT TCATCTTTCC ATTCTACTGG ATTTTGACAG GGGCATTCOA ATCACAACCT	23520
GATACAATTG TTATTCCTCC TCAGTGGTTC CCTAAAAATGC CAACCATGGA AAACCTCCAA	23580
CAACTCATGG TGCAGAACCC TGCCTTGCAA TGGATGTGGA ACTCAGTATT TATCTCATTG	23640
GTAACCATGT TCTTAGTTTG TGCAACCTCA TCTCTAGCAG GTTATGTATT GGCTAAAAA	23700
CGTTTCTATG GTCAACGCAT TCTATTTGCT ATCTTTATCG CTGCTATGGC GCTTCCAAAA	23760
CAAGTTGTCC TTGTACCATT GGTACGTATC GTCAACTTCA TGGGAATCCA TGATACTCTC	23820
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CGTACCTTCT GGAGGTAGC CTTCCTGATT GTGAAACAG GGTTTGCAGC CCTTGCAATC	24000
TTTACCTTCA TCAATACTTG GAATGACTAC TTCATGCAAT TGGTAATGTT GACTTCACGT	24060
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GGTTTGATTA TGGCAGGAGC TGCCCTTGCT GCTGTTCCAA TCGTCACAGT CTTCTAGTC	24180
TTCCAAAAAT CCTTCACACA GGGTATTACT ATGGGAGCGG TCAAAGGATA ATACTCTGCG	24240
AAAATCTCTT CAAACTACGT CAGCTTCACC TTGCCATACT TAAGTATTGC CTGCGGTTAG	24300
CTTCTAGTT TGTCTTCAA TTTTCATTGA GTATAGGAAA ATCAATCTAT CAAGATACAG	24360
AAGTATATTT TATAGATTTA GAGAATATAG AGGTATAAG TGTCTACAAA ATGGAGGGTA	24420
TGCAGTTACT TTATGAAGTT TTGTGAGACA CTTATAAACT TAAGAATGGT TTTAGTTAAC	24480
TATCAGAAAC GAAGGAAAGA GTATGATTTT TGACGATTTG AAAACATCA CCTTTTACAA	24540
AGGGATTCAT CCTAATTTAG ACAAGGCTAT CGACTATCTC TACCAACATC GTAAGGATTC	24600

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TTTCGAATTA GGAAAGTATG ATATTGATGG AGATAAAGTC TTTCTAGTTG TTCAGGAAAA	24660
TGTCCTCAAT CAAGCTGAAA ATGATCAATT TGAGTATCAT AAGAACTATG CAGATTTGCA	24720
TTTGCTGGTA GAAGGACATG AATATTCGAG CTACGGTTCA CGTATCAAAG ACGAGGCAGT	24780
AGCATTGCAC GAAGCGAGTG ACATTGGCTT TGTTCATTGT CATGAACACT ACCCACTCTT	24840
GTTGGGTAT CACAATTTTG CGATTTTCTT CCCAGGTGAG CCACATCAGC CAAATGGTTA	24900
TGCAGGCATG GAAGAAAAGG TTCGAAAATA TCTCTTTAAA ATTTTGATTG ATTA AAAATA	24960
GGATGAATTG TTTT TTTGTA AAGCTTTGAT AATACTCTAC CATGAAATTG ATCTTTGTGA	25020
GGTAGAGAAA TGAGAATAAA ATATTTAAAA ATTGGTATCT TCTAAGTATG CTGCAAGAGC	25080
TAGTTTCTTA GATGGACAGG GGATTACAGT TGATGAGATG GCTTGATAA TTAGGGGCAT	25140
TGTGAATGCA TTGATTGGTA GATACATAAA ATTAGGTACT TATGCGGCTA AGTATGGTAT	25200
TAGTATGGCA CGCTCGATCT TAAGTAGGGT AGCTGCAACT GCAGCAGCAA GAGTAGGATT	25260
ACTGACCAAG ATTTCTGGAT GGATTTTACG AGTAGCTGTG AATGTAGCTG ATGTATATGG	25320
TAATTTTGCC AACAATATTG CTGCAGCTTG GGATGCATAT GATAAAATTC CTAACAATGG	25380
TCGTATAAAC TTTTAAAATG CGAGAATGAA AGCACTTTGT ATTTTTTTAT TGAATATGTT	25440
AGCTTGACAA GTGCTTGCAA TGATAATTCG TGGAGGGCTA GATGGATTG ATAGGCATAC	25500
TTGGAGTACT ATTTTAATTG CGTCGCTGTT CGGGGTATAT GATTATAAGC CCATAGATAA	25560
AAATAGAAAA AAGTCCAAAA GAAAAAATAG ATTTGTTTCT GGTAGGGACT TATGAAAGCT	25620
TTACTGACAA AAAAGAAAAC AGTTTACAAA GAAAAATGAT GGAGGAGCAA ACATGGCACA	25680
AAAAGGAGTA AGCCTTATCA AGGCAGCATT TGATACAGAT AACTTTCTCA TGC GTTTTAG	25740
TGAGAAGGTC TTGGACATCG TGACAGCCAA TCTTCTTTT GTCGTCTCTT GTTTACCCAT	25800
CGTGACGATT GGAGTGGCTA AAATCAGCCT CTACGAGACC ATGTTCTGAAG TTAAGAAGAG	25860
CAGACGGGTG CCTGTTTTTA AAATCTATCT AAGATCTTTC AAGCAAAATC TGAACTAGG	25920
TCTTCAGCTG GGT TTAATGG AGTTAGGAAT TGTGTTTCTT ACCCTTTCAG ATCTCTATCT	25980
TTTCTGGGGT CAAACAGCTC TGCCCTTCCA ATTGCTGAAA GCCATTGTGTT TAGGTATTCT	26040
GATTTTCTT ACTATCGTGA TGCTGGCTAG TTACCCTATC GCGGCACGTT ATGACCTATC	26100
TTGGAAAGAA ATTCTTCAA AAGGATTGAT GTTGGCTAGT TTAACTTTC CTTGGTTCTT	26160
CCTCATGTTA GCCATTCTTG TCCTCATTGT GATGGTTCTT TATCTGTCCG CCTTCAGTCT	26220
ACTCTTAGGT GGCTCAGTCT TCCTACTTTT TGGGTTTGGG CTATTGGTCT TTATCCAGAC	26280
TGGATTGATG GAGAAAATTT TCGCAAAATA CCAATAGGAG CTTTATTTCT GAAACTACTT	26340
TCAAAGGCTC CAAACGCTAT TCTATAAGCG AGAAACTAAA ATCGG	26385

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(2) INFORMATION FOR SEQ ID NO: 4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 2716 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

CCTGCCCCGA TTGCCCTAGG CATTAAGTAA ACATATAAAA GCATGTGAGA GACTGTTGGA	60
AAAGCGAGGA AATTTCCCCT CTTTTCCTCT AGTCTCTCCT TTCTTTTGCT GATTTTATTC	120
AAAGAAAATG ATATAAGT AGTTATGGAG AAAAGAAAT TACGCATCAA TATGTTGAGT	180
TCAAGTGAGA AAGTAGCAGG ACAGGGAGTT TCAGGTGCTT ACCGTGAATT AGTTCGTCTT	240
CTTCACCGTG CTGCCAAGGA CCAATTGATT GTTACAGAAA ATCTTCCAAT CGAGGCAGAT	300
GTGACTCACT TTCATACGAT TGATTTTCCC TATTATTTAT CAACCTTCCA AAAGAAACGC	360
TCAGGGAGAA AGATTGGCTA TGTGCATTTC TTGCCAGCTA CACTTGAGGG AAGTTTGAAA	420
ATTCCATTTT TCTTAAAGGG AATTGTGAAA CGCTATGTAT TTTCTTTTTA CAACCGGATG	480
GAGCACTTGG TTGTGGTCAA TCCTATGTTT ATTGAGGATT TGGTAGCAGC TGGTATTTCA	540
CGTGAAAAAG TGACCTATAT TCCTAACTTT GTCAACAAGG AAAAATGGCA TCCTCTACCA	600
CAAGAAGAGG TAGTCAGACT GCGCACAGAT CTTGGTCTTA GTGACAATCA GTTTATCGTA	660
GTAGGTGCTG GGCAAGTTCA GAAACGTAAA GGGATTGATG ACTTTATCCG TCTGGCTGAG	720
GAATTGCCTC AGATTACCTT TATCTGGGCT GGTGGCTTCT CTTTGGTGG TATGACAGAT	780
GGTTATGAAC ACTATAAGAA AATTATGGAA AATCCCCCTA AAAATTTGAT TTTTCCAGGC	840
ATTGTATCGC CAGAGCGGAT GCGCGAATTG TATGCTCTAG CGGATCTTTT CTGTTGCCT	900
AGTTACAATG AGCTCTTTCC TATGACTATT TTAGAAGCTG CGAGTTGTGA GGCTCCTATT	960
ATGTTGCGTG ATTTAGATCT CTATAAGGTG ATTTTGGAGG GAAATTATCG GGCGACAGCG	1020
GGTAGAGAAG AGATGAAAGA GGCTATTTTG GAATATCAAG CAAATCCTGC TGTCTTAAAA	1080
GATCTCAAAG AAAAGGCTAA GAATATTTCC AGAGAGTATT CTGAAGAGCA TCTGTTACAA	1140
ATCTGGTTGG ACTTTTATGA GAAACAAGCC GCTTTAGGGA GAAAGTAAAA AGTGAGGTAA	1200
TCTATGCGAA TTGGTTTATT TACAGATACC TATTTTCCTC AGGTTTCTGG TGTGCGACC	1260
AGTATTCGAA CCTTGAAAAC AGAACTTGAA AAGCAGGGAC ATGCTGTTTT TATCTTTACG	1320
ACGACAGATA AGGATGTCAA TCGCTACGAA GATTGGCAAA TTATCCGCAT TCCAAGTGT	1380

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CCTTCTTTG CTTTAAAGGA TCGTCGCTTT GCCTACCGAG GTTTTAGCAA GGCACCTTGAA	1440
ATTGCTAAAC AGTATCAGCT AGATATTATC CATACTCAGA CAGAATTTTC TCTTGGCCTG	1500
TTGGGGATTT GGATTGCGCG TGAATTGAAA ATTCCAGTCA TCCATACCTA TCACACCCAG	1560
TATGAAGACT ATGTCCATTA TATTGCTAAG GGGATGTTGA TCCGGCCGAG TATGGTCAAG	1620
TATCTGGTTA GAGGTTTCCT GCATGATGTG GATGGGGTTA TTTGCCCTAG TGAGATTGTC	1680
CGTGACTTGC TATCTGATTA TAAGGTCAAG GTTGAAAAAC GGGTCATTCC TACTGGGATT	1740
GAATTAGCCA AGTTTGAGCG TCCGGAAATC AAGCAGGAAA ATTTGAAAGA ACTGCGTAGT	1800
AAACTAGGGA TTCAAGATGG TGAAAAGACG TTGCTTAGTC TTTGAGAAT CTCCTATGAA	1860
AAAAATATTC AAGCAGTTTT AGCAGCCTTT GCTGATGTTT TGAAAGAGGA AGACAAGGTT	1920
AAACTGGTAG TAGCTGGGGA TGGCCCTTAT CTGAATGACC TCAAAGAGCA AGCCCAGAAC	1980
CTAGAGATTC AAGACTCAGT CATCTTTACA GGGATGATTG CTCCTAGTGA GACGGCTCTT	2040
TACTATAAAG CGGCGGATTT CTTCATTTCT GCATCGACAA GCGAAACGCA AGGTTTGACC	2100
TACTTGAAA GCTTAGCCAG TGGAACACCT GTCATTGCTC ACGGAAATCC TTATTTGAAC	2160
AACCTCATCA GTGATAAAAT GTTTGGAACC TTGTACTATG GAGAACATGA TTTGGCTGGT	2220
GCTATTTTGG AAGCCCTGAT TGCAACACCA GACATGAACG AGCATACCTT ATCAGAGAAA	2280
TTGTATGAGA TTTCAGCTGA GAACTTTGGG AAACGAGTGC ATGAGTTTTA TCTGGATGCC	2340
ATTATTTCAA ATAACCTCCA GAAAGATTTG GCTAAAGATG ATACGGTCAG TCAGCGTATC	2400
TTTAAGACAG TTTTGTATCT TCAGCAACAG GTGGTTGCTG TACCTGTAAA AGGATCTAGA	2460
CGCATGTTGA AGGCTTCAAA AACACAGTTG ATCAGTATGA GAGACTATTG GAAAGACCAT	2520
GAAGAATAGA AAGAGGAACA GCTATGAAAA AAACAATTAA TGAGAAGCGG TCGTGATAAA	2580
AAGATTGCGG GTGTTTGTGC TGGGGTGGCC CATTATCTGG ATATGGATCC GACTATCGTT	2640
CAAGTCATTT GGGGTGTTCT TACTTGCTGT TACGGAGCTG GAATTGTAGC TTACATTATT	2700
TTATGGATTA TCGCGA	2716

(2) INFORMATION FOR SEQ ID NO: 5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13926 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

CCTTGGTTTT GCCTTATTCA AGACATGAGG GCCATCAGGA ATGATCTGAA ACTGCGAATC	60
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TGTTAACAGT CTATGGAGAG CTTTCATAGA ACTAAGATTC GGTTCATCTT TGCTGCCACA	120
AATTAGTAAG GTTGGATAAG GGTAAGTCC TGCTATATCC GTTAAATCAA GTGTCTTCAA	180
CTCCTCAGAA ACTCCGACCA TAAGAGTCTT GTCTGCTCCC TGTTTTTCAA ATACTCTTTT	240
GGGAAGTAGT TTA AAAATCA GCAATTGAAG ATAAATAGG ATATCCCTG CTAATTTAAG	300
CGGCATCCT GACAGAAATCA AAGCTCGAAG ATTTGGTAAA TCGTAACTGG AAAGTTCTAG	360
TGTCAGGGCA GCACCTAAGG ACAATCCAAT CAAAACAAAA GGTCTGTCT CTGAGCTAG	420
GTGCTGATAA ACTCGCTCTT TAGCTTGTG ATAGTTACTA ACTCCAGAAG GAAATAACTC	480
GATAGCCTCA GAAGGATAAT CTGTCAGTAG ATTCCGAAGT TCTTTCCAAG ACTCTGTGA	540
CTGCCCTAAC CCATGCAAAA ATATTAATTT CATCTAGTTC TCCTCAAGGC TTAATTCATA	600
CAAGCCTCTC ACTGCATTAC AGCCGTAAAT AGCTTCTGCT TGGGTAAAT CTGCCAAGGT	660
CAAGACTTTC TCTTCTACCT GTCCTGTTTC TAGCAATGC TGACGGTAAA TTCCTGGCAA	720
GATTCCAAGT CGGATAGGCG GTGTGTAGAG TTTCCAGCG ATTTTCAGAA CCAATTTCC	780
TATAGAGGTT TCAAGCAGTT CTCCTGACTT ATTGTGGTAA ATCTTCTCTT GTTCTCCTAG	840
GCTCAATGC GGTCCGTGAG TGGTTTTAAA GTAGGTAAAG GATTGATTCA AAGCAGCTTC	900
CTGAAGACAG ACTTGGGCCT GACAAAAGCT TGTACTGAGA GGGGTAATA CTGACGATT	960
GACTTCTATC TCTCCAGATT TGCTAAGGCT GATTCCGAAG CGGTAATCTC GATTAGCTTC	1020
ACAATCCTGA CACTCTTCCT CAATCTGTG TCCCAAGTCT TCTGCATCAA AAGGAAAAGC	1080
AAAATAACGA CTAGCTTTTC TCAGCCTTTC CAGATGTTGT TCTTCAAACA TCAGTTGTTT	1140
TTGGCTGATT TTTCCAGTTG TAATTAATTG GAAGCGAGCT TGTTTACGAT AGAGAACTGC	1200
TGCCTTTTGA TGAACCTCTC GGTATTCAGA TTCCCATGTG CTATCCCAAG TAATCCCTCC	1260
GCCAACTCCA TAAATGGCTT GACCTTTGTG AAGTTGAATG GTACGAATGG CCACATTAAA	1320
AATCCGTCGT CCATTGGA GCAAGAGACC AATCGTTCCA CAGTAGACTC CACGCGGTTG	1380
AGGCTCCAAG TCCTTGATAA TCTCCATTGT CGCAATTTTC GGTGCACCCG TTATGGAACC	1440
ACAAGGAAAG AGTGAGCGGA AGATTTCAAC AAGTCCACA TCCTCTCGCA ACTGACTCTT	1500
GATGGTCGAA GTCATCTGCC AAACAGTTGA ATACTGCTCT ACCTGACACA GACGCTCCAC	1560
GTGCTCGCTC CCAACTTCAG AAATACGGTT CATATCATTG CGCAAGAGGT CCACAATCAT	1620
CATATTTTCA GAGCGATTTT TGGGATCCTG TTCCAACCAA CTGGCCTGTT CAAGATCTTC	1680
TTGGTCAGTT ACCCCACGCT GAGTCGTCCC CTTCAATTGGT CGTGTGTCA ACTCGCGATC	1740
ATTTTGCTCA AAAAGAGCT CTGGGCTCAT GGAAATCACT GTCATCTCGT CATGTTCCAC	1800

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ATAGGCATTG TAGCCCGCCT CCTGCTCTAC CACCATACGA TTGTAGATGG CAAAAGGATT	1860
GGCATTTAAC TTTTGCTTAA GTTGGACGGT GTAGTTGACC TGATAGGTAT CTCCCTGCCG	1920
TAAATGATGG TGAATTTGGG CAATGGCCTT TTCATAGTCT GCTGCAGACG TTA CTTCCTG	1980
CCAATTTGAG GGCAAATCAA TATCCTCATA AGTCAGAGGA ATAGGGGAAG TTTCTACGAT	2040
ATCATGAACA GTAAAGTAAA GCAGGTACTC TCCCAGTAGG GGATCCTTGT GAACTGCTAA	2100
TTTTTCCTCA AAAGCAGGTG CAGCCTCGTA GCTGACATAC CCCACCACAT AATAACCTTG	2160
CTCTTGCTAG CTTTCCACTT GTGCCAGCAA ATCTGCCACT TCTTCTACAT TTCTCGTTTT	2220
CAACTCTTTA ATAGGCTGGG TAAAGGTATA TCTCTCCCC AAAGTCCTAA AATCAATCAC	2280
TGTTTTTCTA TGCATACCTT AAGTATAGCA TAAAATAAGA AAACCCTCAT CCGCAAAGCA	2340
GATGAGAGAT TTCAATTATT TAAAGATTGA AGTTTTAAAG CTATTTGTTT GTTGAAGAAG	2400
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GTTTGCTTCT TGTTTAAGAG TTTCGGCATC TTTTTTAACA GCTTCTTTAA ACAATGTCAG	2520
TAAATCATCG TATGATGAAA CGGAAGAACC ATTTACTTCG AATGTTGTTA ATCCTTTCGT	2580
TGCTTTATCT TTAAGTTCTT TGAAGTAAGC TTTTTTAAAT TCTTCAATAG TATTAAATGT	2640
ATTGTTAGAT ATTTTCTTGA TAATATATTC ATCACTTAGA ACAGACTCAC CATCTGTTTT	2700
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GCTAATTGCT TCGGGTTTAT AGATACCATT ACCTGGATTG CGATTAGTCA TTAATTGTTG	2940
ATCAACTAAA TCATTAACAG ATTGAATATT TAATTCATTT TTCTCTTCTT GACTTAGATT	3000
TCGAATTTTA TCCCATTGAT TTAATTTATT GTTATCACGG TATTCTCTAT CTATTTTTTT	3060
GAACCATGCA CTATTTAAAT CTTTATTTTG TTGAGAAATC ACAGATTCAG CCTCAATTC	3120
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AACCATTTCT AAATGAACAT ATTTTACATC AGTTCTAATA TCATCAGAGT TAGGATATAT	3480
AGCAGCATAA GCTCCTGTTT CATTATAATT ATAATACTTA TCCATAGGAC CAAAGAATTC	3540
TCTAAGAGGA GTATATACTT TGTGGGTATT ATAGCGGCCA TATTTTTCAT CCCATCCACC	3600

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AGGAGCGTTA TAACCTTCCC AAATAGGAAT AACAGCATCT CTTAGTAGTC GTTGTTTAAC	3660
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GTTAACGATA TCTTTAATAT CTTCTAATGA TTTTTTACCT AATCGCTCTG CACTACCAAA	3780
GGCAATTGCA TTATAATTTG AAATTAAATA AAGATGTGCT TTATCAATAT TCAGTAGTGG	3840
GAGTATAGTA TTTCTAAGGT GACTTCGTTT TAAATTATCG AATGCACGAT GTTTAGAATT	3900
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AATAAACCAA TCGTTCATAT TGTCTATATT TGTGAACAA TGTCTATTAT AATTTAAAAA	4020
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ACGTGAACCT TTAATGTTGT TCTCTTTAGA ACCGATTTCA ATTAATCTGT CTAATACGCT	4140
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TTCTTCTAAA TATAAATCTT TGATTGCATT AACTCTATAG TCACCTAATC GATTTAGATG	4440
CTGATACATC GTTTGAGACT GAAGCTCTAC TGATTCTAAA ATAGATTTTA TATCATTAAC	4500
AAGAGTAGTG TTATCTTTTT GAACGATATT AGGTGTATAT TTAATTCCTA AGTCAGTTAT	4560
AGTATATTCT TTTACATTAC TTAAACCTTC ACTGCTAGAA GACAAGTTAA AGTAATCTTT	4620
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TAATTTATTA CCTTGATATA CAATATAATC TTTATTGTAG AATGGTATTA ATTTTCAAG	4800
ATTTTATAG GCTTGGTTAT ATTCAGCGTT ATAATCTTGA ATACTAGAAT AGGCTTTTTC	4860
TTCATTAAGT TTTGCAAGAG GAGATAGATC ACTTTCTAAT TTATCAGCAG TAATATTGAA	4920
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TTTTGTACCA ATAAGATGGT CTAGAGTTAA TCCATAATCT ACTTTAGGAA CTAACAAGCT	5280
GGCGCGTGT TTGTTTCCTG TAATAGTAGC ATCAACATAT GCTTTTCTAA CAATTCCTCT	5340

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ATAGTTTGTA CCTGCAATTC CCCCTGTATG AGAGCCATTT CCACTTGTAG AGTGAGTTT	5400
GCCAAAGAAA GCAACATTTT CAATACGAGT TCCATCATTC ATATTATTTA CAAATCCAGC	5460
AACATTATTA CGACCTGAAA GTGTGCCTGT AATTTTGACA TTTGTAATAA CTGAAGAACC	5520
TTTCATAGTA TTGGCTAATG ATGCAATATT ATCTTGACCA GAACGTTCTA TCTCTACATT	5580
TTCAAAATTC ACATTATTTA TCGTTGCGTT TGTATCACA TTAAATAATG GATGTTCCAA	5640
TTCAGTAATA GCAAATTGTT TTCCTTCAGA ACTTAAAAGT TTTCTGTGA ATTCTTTAGT	5700
GATATATGAT TTTCCATTAG GAACAACATT TCTAGCGCTC ATTGATTGTC CCAGACGATA	5760
TTCTTTTGAA GGATCGTTT GAATAGCTTC CACTAATTCT TTGAAATTAT AATATACATT	5820
ATCTTCGTGG ACTTTAGGTT TTTCAATATA GTGAACGTAT TCTTCTTCAA ATTTATTATC	5880
AGCAGTTCTA GAGACTAAAT TGTCTGCGAT TGCTGTAAC TATATACAG GTGTTCCGTT	5940
AACCGTAGTT TCTTCTATAT TTTTAACAGC TAGTAATGTA GTTTTCTGAT TATTTGAAGT	6000
TATTTTAA TAATAATTGC TCTTATCATC AGGAATAGTT GTTATCAGTG ATTCATTAGT	6060
TTCTTTTCCA TTTTCGTATT TGATTAATC TGTACGTTA ATATTTTAA GCTCAACTTT	6120
TTTAAGATCT AATTGAATAT TTTGATTTT TAGAGTTTCA GTTCTTTCAC CGTTACCTCT	6180
GTCGTAAATC ATAGTTGTAG ATAGGGTGTA TTCTTTGTAG TACTCTAGGT TCTTAAATGC	6240
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TTCTCCTTTT TTCAATTCAG CTGTGATTGA TTTGATTTT GTTTTGTGTTT GATTTTCTAG	6360
AGTATACTTA GCAACAGCTT CACGTTCCTA TATTTTCTTA TCGGTACTAG TCAATGTTAA	6420
TATTGGCTTT TCAGATAATT CAACCAATTT TTCAATAGTT GCAGTTAATT TTTCAACAGC	6480
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TTCAAGTTTG AGGTTTGGCC AACTTCTATC ACTGTAATGT TCTTTTACCT TTGTTTTTGC	6600
ATCTGCAATC GTATTGTTTA ATTCAGTTT ATCAACGTTT AGAGCGTCAA TAGCCGTTT	6660
AAGTTTATTT GTCTCGCTAT TTACCTCAGG CTGTTTACA GGCTCTGAAG CATAGACACC	6720
TTTTGCAGTT TCTAAAACAG GTCCAAGAGC ATTGTAACCT GCTGTAGAAT AATCAGTAGG	6780
AGAAACTGAA CTAGCTTTAT CAATTTGATT ATTTAACTCA CTTTATCAA CTGTTCTTT	6840
AGTACCAATA CCTTTATTT TATCTTCTGG TTTCGGTGT TCCTCTACAG CCTTCTCTTC	6900
TTCAAGAACT TCTGGTTGCT TTTCTGGCTC AACTGGTGCC GTTGGTGCCT GTTCGTCTTC	6960
TCTTGGCGCG ACTGGTTCAC CTGCTTGTT AACTTTTGGT TCCTCTGTTG GTTCTGTTTG	7020
TTTTTCTACA GCAGGCGTTT CAACTTTTGG TTGTTCAATA GATTGATTAA CAGTCTCCTC	7080
TTTTGGTTCT ACAGTTTCTT CAGCCTTGGT ATCTGGAGTT GACTCTTCTT GTTTCGGTGT	7140

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TTCCTCTACA GCCTTCTCTT CTTCAGGAGC TTCTGGTTGC TTTTCTGGCT CGACTGGTGC	7200
CTTTTTCGTCT TCTCTTGGCG CGACTGGTTC ACCTGCTTGT TCAACTTTTG ATTCTCAGC	7260
TGGTTTGTCT GATGGTTGAC TTTCTGGCTT AACTGCTACT TTTTCCTCTG GTTTTGACTC	7320
AACTTCTCCA CCTACTTCTT CAACTGGAGC TGGTTCTGCT GAATCTTCTT TCCCCTCTTC	7380
TACTTTAGGA AGGGTGTCTG CAGTAGGTTT TACCTCCGAT TTTGGTTCTT CCTTTGGACT	7440
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TGTCCTAGCT TGCTCCTGAT TTGTTATTGA TTGAGGAGTC TCAACTTCGA CCACAGTCAC	7560
CTCTCCAGGT TTTGCTGAGG TTTCTTCTAA AACAGTGTC AAGCCAAGCG TTTTGAGGAT	7620
GTCACCTGAT AGATAACCAA CATAGCGATA GCCCTCCATT TCAACAACAC CCTCTCGACT	7680
AGCCAGCGCT AGGGTCGCAA CTGGGTCTAC AGCCCTGCA CTAGGAAGAA CTACCAATCC	7740
CATAGCTCCA ACTAGAAAGA CGCTAGCAAT TTTCTTTCTC TTGTAGATTA AAAGCAAGCT	7800
CCCAACAGTC AGCAAACCAA AAGCTGTCAA AACAGATGCT TCTGTCCCTG TTTGAGGCAA	7860
CTGATCTTTT TGATACACCA AACCATATAC AACTTCATTC CTGTCAGGCT TTCCTGTCTG	7920
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GTCCACTACA GAAGGAGCCA TCAAAAGGCT TCCAAGAAAT ACAGAGCCTA CAACTCCCTT	8040
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CAGAATTGAC TGGGAGTTAG CTAGTTTCTA TTCTATTTAT ATATATTTCA ACTTTCGTCC	8820
CTTTTGGGG TCTAGAATCA ATCTTCATAT GGTAAATTGGC TCCAAATGA AGTTTGAGCC	8880

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GTGATCGAC ATTTTGAAGA CCAACTCCCC CACGTTTGAG TTGACTTTGA CTAATATCAC	8940
CAGCATCTTG GAAGCCAACG CCATCATCCT CAATACGGAT GACCAATCCC GAATCCTGTT	9000
TCTGGACAGA AAGTTTAATA TGGCCCTGAC CTTCTTTTC CTTAATGCCA TGGTAAAGAG	9060
CATTTTCTAC AAGGGGTGT AGGACCAGCT TGGGTAAGAC TAAATTATCA AAGGCAACAT	9120
TTTCATTAAT TTCGTATTCC AGCTTATCTC CATAGCGTTG TTTCTGGATA AAGAGATACT	9180
GGCGGACATG ATTGATTTCG TCAGAGAGAC AAATCAAGTC CTTGCCTTGA TTGAGCGCCA	9240
AGCGGAAATA GGTGCCAAG GACTTGGTCA CCTGCACCAC TCGCTGACTA TCATGAAATT	9300
CAGCCATCCA GATGATGGTG TCCAAAGTGT TATAGAGGAA ATGTGGATTA ATCTGGCTCG	9360
AAAGGGCTTG AAGTTGGTAC TGACGGGTCG TTTCTTCCTG GCTACGAATA GCTACCATCA	9420
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CACCAACTTC CTTGGCACGA AGATTTTGAG CACCAGAAGC AATTTCACAC ATGGTTTCTC	9540
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CAAGAAGAGA TGTGACACTG GCCCAAGCA AGGTCCACAA GAGCTGACTC CGAACCTGGT	9660
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GACTGACGTA GGATTTGTGA CCAGGAGTAT AACCTGACC TGTATCGATG TAGGGTTTCA	9780
TAGCTCCAT TTTGCTAGAC GAACTATAAA CTGTGTGTTG AGGATGGTAG ACAAATTCAT	9840
GGTTTTCATT GATAATGAAG GCAAAGCCCT GCTGCCCAA CTGGAGTTGA TTGAGATAGG	9900
CTTCCAGAGT TTCATAAGAA ATATCCAAAC GAAGCACACC AAGATTGGCT CCCTTTGCAT	9960
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GCACAACAGT TTCAAGTCC TTATCTGACT TCAAGATGGT CAAAACAAA TCTCGGATTC	10200
CCTCGACCTT GTCTTGACTG GGATTCTCAG CATAGGCCAG AACATCCGTC TGCTGGGTCA	10260
AACCAGTCGA GGTGGTTTCT AGTTTTTTGA TATAAGACTG AATAAAGTGG CTAGTCTGGC	10320
TGATGGTCGT TTGGCTGTTG CCCTCAATGG TGGCTCAAT GGCTGAAGAA CTTGATTGAT	10380
AGTAGAAAGT TCCAACCAGA GCTAGGAGAA TGAGAAAGAC CAGAAAGATG GAAATAACCA	10440
TTCTAACTAA AAGAGAAGAA CGCTTCATCG GTCTTCTCCC TTCTTAAACT GACGAGGTGT	10500
CACACCTGCA ATCTGCTTAA AACGTTGGGT AAAATAGTTC ATATCTTCAA AACCAACCTT	10560
CTCTGCGATC TCATAAATCT TCAGATCTGT AGTTAAAAGC AAGAGCTTGG CTTGTTTAAAC	10620
ACGTTCTCTC ACCAGATAAT CCTGAAAAGG CAAGCCCAAC TCTTCTTAA TCAAGGAACT	10680

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CAGATAGGTC	GGACTAAAAC	CTAAGTCACT	GGCTAAAGAC	TTTAACTAA	ATTGGCTATC	10740
AGCCAGATGA	GA CTGGATTT	TCTGGGCCAT	GTTTCCTTCA	AACCTATTAG	TCAATAAATC	10800
TTGTAACTGC	TCTTCTTTCT	CTTCCTTGTC	TAGTMTTGT	TTGATTTTCC	CCAACATTTT	10860
CTCAATATCC	TGACGAGAAA	AGGGTTTGAG	CAGGTAGTCG	TCCACACCTA	GTTTGACAGC	10920
AGACAAGGCA	TAATCAAAAT	CATCGTAACC	TGTTAAAAAG	ACCAAATGAA	CCTGAGGATA	10980
GGTTTCTCGT	ACCAGACTGG	CCAACCTGGAT	GCCATTTAGA	TGAGGCATGT	TGATATCGGT	11040
TAAAAATGATA	TCTGGCACCT	GCTTTTGGAT	CAATTCCCAA	GCCTGCCTTC	CATTTTCAGC	11100
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TACCAGATAT	TCATCTTCTA	CGATTAAGAT	TGTGTAGGTC	ATGCTCTGCT	CCTTTACCAC	11220
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AATAAAAATC	AAAAAGTAAA	CTAGGAAGAT	AGCCACAGGT	TTCTCAAAGT	ACCGCTTTGA	11340
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TGACGAAGTC	GATAACCCTA	CATACGGTAA	GGCGACGCTG	ACGTGGTTTG	AAGAGATTTT	11460
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GGACCATCCG	TAAAGACATG	CCCAAGGTGA	GAATCTCCTA	CTCGGCTCCG	CACCTCCATA	11640
CGCGTCATAT	TGTAGGACTT	ATCTTCCTTG	TAGGTGACAA	CATCTGGACT	GATGGGTTGG	11700
GTAAACTAG	GCCAGCCACA	ACCAGACTCA	AATTTGTCTT	TTGATGAAAA	GAGAGGTTCC	11760
CCAGTTGCTA	TATCCACATA	GATACCGGAT	TCAAATTTAT	CCCAGTAACG	GTTTGAGAAA	11820
GCTCGTTCTG	TTTGATTTTC	CTGGGTAACT	GCATACTCCT	CAGGTGACAG	GGTCTTTTTC	11880
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TCAGCCACCA	CAAAATTCCT	CAAGTTTTC	TTTTCAACTG	CTAGAGGTTG	ATCGTATTTT	12060
TTAGCCACCT	CATCAAAGAC	TTGGTTAATC	ACTTCCAAAT	CCTTGTCATC	TGTGTAATAA	12120
ACACCAGTAC	GGTACTGGGT	CCCCACATCA	TTTCCTTGTT	TATTTTGTCT	GGTTGGATTG	12180
ATAATGCGGA	AATAGTGAAG	CAGGATTTCC	TTGAGAGAAA	TTTGCTTGGC	ATCATAGGTG	12240
ACATGGACGG	TTTCTGCATG	ACCTGTTTGG	TTAATCAATT	CGTACTTGGT	TGTTTCTCCT	12300
CTACCATTTG	CATAGCCTGA	AACGGCATCC	GTCACCCCGG	GAACACGTGA	GAAATATTCC	12360
TCCACTCCCC	AGAAACAACC	TCCAGCTAGA	TAAATTTTCGT	GCAAGTCTGC	GTCTTTACTA	12420

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ATTCTGTGTTT TTTTCACTGC TTTTCCTCCT TGGCTAACTG CCGCCTTTTC AATTGCGAG	12480
GCATCTGTCT GCCCTGCATT TCGTATCAAT AGAACATAGA AACCGGTTAT GGCTAGAAAA	12540
AATACTCCTA GCAACAAGAA GATTTTAAAC TTATCATTCA TAAGACGCCT CCTAGGCTAA	12600
TTCTTCAAAA GTTTGCAAAA TTGCATCTTT TTCCATGAAT CCTGGATGTG TTTTGACCAG	12660
CTTGCCCTTCT TTGTCTATAA AGGCTTGGGT TGGTAAGAA CGGACACCAT AAGTTTCCAA	12720
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CACATAGTCA TCACCAGCTT CTTTAGCAAT CTCATCCGTA TCTGGAAGAC TAGCCAGACA	12900
GATGGAACAC CAAGAAGCCC AGAATTTGAG ATAGACTTTC TTGCCCTTGT AATCAGATAA	12960
ACGGTAGGTC TTGCCATCTA CTCCCATCAA TTCAAATCA GCCACCTCTT TCCCTTTAGC	13020
TGCGCTTGTT TTAGTAGCTG TCTGCTCCGT CTTTATTTC TCTTTCGTTT GGTGTTCACT	13080
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TTGAAGCATT TCCAAACAGA ACCAAGAAGC CCATCACAAT AATGAGAAAA CCACCCACTT	13260
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TCAGAGCTAG AAGCAAGAAT GGTAGCGCCA AGCCCAGCGT ATACACCAAC ATGAGACCAG	13380
CTCCCTGCCA AGCTCCTGAA CCACCTGAAG CCGCCAAGGC CAAAACAGAC CCCAGAACCG	13440
GCCCCACGCA AGGCGTCCAA GCAAACTAA AGGTCAAGCC CAATAAAAT GCCTGACTAT	13500
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TAAAGTGTAG AATCTCCATT TGGTGCAAAC CAAGAAGGAT AATAATTGCC CCAGTAAGAT	13620
ATTGGAACCA AGAAGCATAA AGCAAATCGC CTAAAAAACC AGCTCCATAG CCCAACAAAA	13680
TAAATATAAA GGAAATTCCT GCTATAAAG CCAGAGTTCG TAATAAACTA GTAAGTGA	13740
TTGAAAATTT GCCGCTAGAA GCCTGAGCAC CATCCTTATC ATCTAGTAAC ACTCCTGTAT	13800
AGACCGGTAA CAAAGGTAAG ATACAAGGAG AAAAGAAGGA TAGAATCCCT GCCAAAAAGA	13860
CACCTAGAAA AAAGAAAATA TGACCCATAA AGTTCCTCCT ATCATTTTAT TGATAGATT	13920
ATTATA	13926

(2) INFORMATION FOR SEQ ID NO: 6:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 20199 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

CCCAGCAGAA AAATGGCATT TGGAGATAAT GGAAATCGTA AAAAACTAT GTTTGAGAAA	60
ATAACCTTGT TTATCGTGAT TATCATGCTA GTAGCAAGTT TATTGGGAAT TTTTGCAACT	120
GCAATTGGTG CCCTCAGTAA TCTATAAAAT AGATTCAAGA AAATTTAGTG ACTGGGATTT	180
CCCAGCCCTT TTTTAAAGTG AGAAGAAATA ATGAGTATGT TTTTAGATAC AGCTAAGATT	240
AAGGTCAAGG CTGGTAATGG TGGCGATGGT ATGGTTGCCT TTCGTCGTGA AAAATATGTC	300
CCTAATGGAG GCCCTTGGGG TGGTGATGGT GGTGCGGAG GCAATGTGGT CTTCGTGTGA	360
GACGAAGGAC TACGTACCTT GATGGATTTC CGCTACAATC GTCATTTCAA GGCTGATTCT	420
GGTGAAAAAG GGATGACCAA AGGGATGCAT GGTGCGGTG CTGAGGACCT TAGAGTTCGA	480
GTACCACAAG GTACGACTGT TCGTGATGCG GAGACTGGCA AGGTTTTAAC AGATTTGATT	540
GAACATGGGC AAGAATTTAT CGTTGCCCCAC GGTGGTCGTG GTGGACGTGG AAATATTCGT	600
TTCGCGACAC CAAAAATCC TGCACCGGAA ATCTCTGAAA ATGGAGAACC AGGTCAGGAA	660
CGTGAGTTAC AATTGGAAC AAAAATCTTG GCAGATGTCG GTTTAGTAGG ATTCCCATCT	720
GTAGGGAAGT CAACACTTTT AAGTGTATT ACCTCAGCTA AGCCTAAAT TGGTGCCTAC	780
CACTTTACCA CTATTGTACC AAATTTAGGT ATGGTTCCGA CCCAATCAGG TGAATCCTTT	840
GCAGTAGCCG ACTTGCCAGG TTTGATTGAA GGGGCTAGTC AAGGTGTTGG TTTGGGAAC	900
CAGTTCCTCC GTCACATCGA GCGTACACGT GTTATCCTTC ACATCATGA TATGTCAGCT	960
AGCGAGGGCC GTGATCCATA TGAGGACTAC CTAGCTATCA ATAAAGAGCT GGAGTCTTAC	1020
AATCTTCGCC TCATGGAGCG TCCACAGATT ATTGTAGCTA ATAAGATGGA CATGCCTGAG	1080
AGTCAGGAAA ATCTTGAAGA CTTTAAGAAA AAATGCGCTG AAAATTATGA TGAATTGAA	1140
GAGTTACCAG CTATCTTCCC AATTCTGGA TTGACCAAGC AAGGTCTGGC AACACTTTTA	1200
GATGCTACAG CTGAATTGTT AGACAAGACA CCAGAATTTT TGCTCTACGA CGAGTCCGAT	1260
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GATGACGATG CGACATGGGT ACTTTCTGGT GAAAACTCA TGAAACTCTT TAATATGACC	1380
AACTTTGATC GTGATGAATC TGTCATGAAA TTTGCCCGTC AGCTTCGTGG TATGGGGGTT	1440
GATGAAGCCC TTCGTGCGCG TGGAGCTAAA GATGGGGATT TGGTCCGCAT TGGTAAATTT	1500
GAGTTTGAAT TTGTAGACTA GGAGACTGGT ATGGGAGATA AACCGATATC TTTCCGAGAT	1560
GCGGATGGTA ATTTTGTTC CGCCGACGAC GTTTGGAATG AAAAGAAATT GGAAGAACTA	1620

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TTTAATCGTC TCAATCCAAA TCGTGCCTTG AGATTGGCAC GAACTAAAAA GGAAATCCA	1680
TCTCAGTAAA GAAGCTAAAA AATCCCGTGC CTCATCAGAC ACGGGATTTT GTGGTACGAC	1740
AGGCATGTAT AGCAAAGTGA ATCTGGAATA GCACAGCATA TCTTCTAAAA TATAGTAAAA	1800
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AAGCAGAGAT GTACTATTCT AGTTTCAATC AACTATATTG TTATAAATTG ATTTGAATTT	1920
CAAAATTAAT TTGTTTGATT CTTATTTCAA TTTGTTATAG TATATCTGAT GTCAAAGTTC	1980
TCGGCGAGTC AAATAGCGAT TCCCAAGCCT GACTATCGTG AGGTAGCGGA TTAATATGGT	2040
CTGGGGATAG ACCGTTTTAA GTCTGACGCT GGAAATAAGA ATTGTCAGAA GAAGGGATAG	2100
CGAAATCGTG GCTCTACGAA CAGGAACGTG ATAATAAGGC GTATATAGCG GATAAGAGGG	2160
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TTGGAGGAAT TACCAGTAGG TAAAAGGGTC AGTGTTGTA GCATTTGAA TCATCTAGGA	4740
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CTGGCCAATC AAAAAGGGAT TCCTGTTCTA AGAAGTAAGC ATGATACCTT TACCGTCGCG	5160

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ACCATGATCA ATAAAGCCTT GTCAAATGTC CAAATCAAGA CTGATATTCT GACAGTTGAG	5220
AAACTTTATC GCCCTAGTCA TGAGTATGGT TTTCTGAGAG AGACAGATAC AGTTAAAGAT	5280
TATTTGGACT TGGTTCGTAA GAATCGTAGC AGCCGTTTCC CTGTTATCAA TCAACATCAG	5340
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GTCATTACAG TGGAACCCCT TATGCTAGAA AAAAATGGAG TTTTGGCTAA TGGTGTATTG	5700
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TGAACAAATG AAAAAATACA CTCAGAGCTA TTCTGGTGGT TTAGCAGACT CATGTTGGGC	6360
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TATTCAGAA TACGCTGAAA GTCGTGGTTA CGGTGTAGTG CGTGATTTGG TTGGTCATGG	6540
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ACTCCGTCTT CGTGAAGGAA TGGTCTTAAC CATTGAACCA ATGATCAATA CAGGCGATTG	6660
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AACAATAAC TGATGCACGA TTTAAGCGTC TTGTGGTGT TCAGCGTACC ACTTTTGAAG	7260
AGATGTTAGC TGTATTAAAA ACAGCTTATC AACTTAAACA CGCAAAGGT GGACGAAAC	7320
CTAAATTAAG CCTAGAAGAC CTTCTTATGC CCACTCTTCA ATAGTGCAG AATATCGAAC	7380
TTATGAAGAA ATGCGGCTG ATTTTGGTAT TCACGAAAGC AACTTTATCC GTCGGAGCCA	7440
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TGAGGACACG GTAATGATTG ATGCGACGGA AGTAAAAATC AATCGCCCTA AAAAAACAAT	7560
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GATGAACTTA GTCGAGTCA AAACCTCCTT CATAAGGATT TTGCAGTTCT CTATCGGACT	9240
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GGTCAAAGGC	CATGATAATC	TTCATCTTGT	TACGTTCTGT	GAAGCGGTAG	TGGAGAAGGG	12240

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CATTATTGAC	AAACATGGTA	GAAACCAAAA	TCGTATCGTC	ACGTAAAGCC	TTTTGAATTT	13920
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TGGTCGCTTC CAGTTTGGCG TTAGAATAGT GTAGTTGAAG GCGCTTGATA ATCTTTTCTT	19920
TATCTTTGAG GAAGGTTTAA AAGACAGTCT GAAAAATAGG ATGAACCTGC TTAAGATTGT	19980
CCTCAATAAG TCCGAAAAAT TTCTCTGGTT CCTTATCTG GAAGTGAAAA AGCAAGAGTT	20040
GATAGAGCTG ATAGTGGTGT TTCAAGTCTT CCGAATAGCT CAAAAGCTTG TTTAAATCT	20100
CTTTATTGGT TAAGTGATA CGAAAAATAG GACGATAAAA TCGCTTATCA CTCAGTTTAC	20160
GGCTATCCTG TTGAATGAGT TTCCAGTAGC GCTTGATAG	20199

(2) INFORMATION FOR SEQ ID NO: 7:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19702 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

ACCCGATGTA TCAGCGGATA TTTACTCTAT TTTTCAAACG ATGTTATACC CACAATAAAA	60
GAAAAAAGAC CCTAAGGTCT CCTTTGCTTT TATTATTAAA CGCGTTCAAC TTTACCTGAT	120
TTCAAAGCAC GAGCTGAAGC CCAAACTTTT TTAGGTTTAC CATCGATAAG AACAGTAACT	180
TTTTGAAGGT TTGGTTTAC GGCACGTTTT GTTTGGTTCA TCGCGTGTGA ACGGTTGTTT	240
CCTGATACAG TCTTACGACC TGTAAGTAA CATACTTTAG CCATTGTGTT TTCCTCCTAT	300
TAGATCTAAT ATAGCGGATG TGCTAGCACC ACATACCGTA CTATGTTATC ACATTTTCTT	360
GTTTTTTCGA AGGGAATTGG AAGATTTTTT ATTTGTGTCT TAAATCAGGT CTTGCGTGAC	420
ATTTCTGCTC TCCACATGCC ATCGTTGATT AACAGAACAC CAGAATTAAA ATTATGTGTA	480
TAAAAATCAT CTCTAACTGC AGCTAAGGGT ATAGCCGTCA AGTCCAAATC CCACAGCTCA	540

TCTATCGATT TTCTTACAAC AATATCTGAA TCCAAATACA GTACACGAGA CTCGCTTACA	600
TACTTTGGAA TAAAATACCT AAAAAAGCCG CATATGAAAG TCCCTCAAAG GGGAGACGAT	660
AACCTTTTCAG AATATTACTG TCAATCTAAA CATTACAAAT CTCACTATTC AAAGTCTCTA	720
GTCTTTTTTC CATCAATTGG AACCATTCTC GCGGAAGGTC ATCATTAAAA ACATAAAACT	780
TAAGATTATA ATGATGAACA CAAAGAGATT TTATTGTTGT TTCAACTTTA TCCATATAAG	840
CATTATCTGC ACCTAAGACA ATCGCTTTTT TCTCTCTTT CACTTTTTAT CTCATTTCTT	900
TTTATTCCCA TCATATTATT CCCATCATAT GTTTCCTATC ATATGTTTCT ACGTAACCAT	960
TATTTTCGCC TATTCGTTTC TAAAACCATA CCAGTGGAGA TTTTAGATGA AGTCCCATTA	1020
CGGTTTACAA TTTTACATT ACGACACGGA GTTTTACAAA TCGATTTCAT TTGCCAAACG	1080
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TTTAGTTCCA ATTGTTGGTA CTGAGTCACA TCTTCTCCTC TAACTCTACG TCTGGATACT	1200
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TCTCACGACT CTCCGCCATA AACTGGGTAA CATTAGATAG TTTAGCCCCC TTACCAGTAC	1740
GAGGGAGATT GACACTCATG CCGCGCTCAA ATTTCGCCAGA TACGATACGG ACAAAGGCAA	1800
TACGGTCACG GTGACGAGGG TCCATGTTGG CTTGGATTTT AAAGACAAAG CCTGAGAAAT	1860
CCTTGTGATA AGGATCCACA ATTTACCCGT CTGTTTCTT GTGACCATGT GGTCTGAG	1920
CAAACCTGAG GAAGGTTTCA AGGAAGGTCT GCACACCAA GTTGTGTCAG GCTGAACCGA	1980
AAAAGACAGG CGTCAATTCT CCAGCCAGAA TAGCTTCCTC TGAAACTCA TTCCCGGCTT	2040
CATTTAAAAG CTCAATGTCA TCCTTGACTT GCTCGTAGAA AGGATTGCTA CCAAAGATT	2100
TGTCCCCGTC TTCTAGACTG GCAAAACGCT CATCCCCTT GTAAAGCTCT AAACGTTGGT	2160
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AGCTAGCAAT GCCCAAGATT TCTTCCAATT CTTGCAAGAG ATCCAAAGGC TCACGACCGT	2280

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CCACCGCCAT CAAGGTACGA TAGGTATCTT CTGAGAAGTC CTCGTGCCCT GCGTGTCTA	2460
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CATAACTGGG	TATTGAGGAA	AGTGGCCGTT	AAAGAAAGGC	TCGTTGATGG	TCACATTTTT	13620
GATAGCAACA	ATGGTATCCT	CGCTCACTTC	CAAGACACGG	TCCACTAGAA	GCATAGGATA	13680
ACGGTGGGGA	AGAGCTTCTT	TGATTCTTGG	AATATCGATC	ATTTGATACG	TACCAATCCT	13740
TTACCAAAC	CAACCATTTC	TTCGTTAGAG	ACGAGAATTT	CCGTTACCAC	ACCATCCTTA	13800
GGAGCTGGGA	TTTCATTTCAT	GACTTTTCATG	GCTTCGATAA	TTACCAATGT	TTGACCTTTT	13860
TTGACACTAT	CACCAACTGT	AACGAAGGCA	GGTTTATCTG	GTCCAGCAGC	CAAGTAAACC	13920
ACTCCAACAA	GTGGACTCTC	TACAAGATTT	CCCTCAGTAG	CCACACTTGC	TTCAGCTGGA	13980
GCTGGAAC	CTTCTGCTAC	AGTCTCTGCT	GGAGCAGATG	TAGGAGCTAC	TGGACTCGGT	14040
GTTGCTAGAA	CGGGTGCTGG	AGCGACTTGA	GTTGCAACTT	CAGGCACAGG	TCTTGCTTCA	14100
TTCTTGCTAA	ACTGCAACTC	ATCCGTCCCA	TTTTTATAAG	AAAATCTCT	CAAACTTGAC	14160
TGGTCAAATT	GAGTCATCAA	GTCTTTAATA	TCGTTTAAAT	TCATACTTAT	CTATTCTCCC	14220
AACGTTTGAA	AGCAAGAACT	GCATTGTGGC	CTCCAAAACC	AAAAGTATTT	GAAATAGCGT	14280
ATGGAATTT	TTTCTCCAAG	CCTTGTCAT	AAACGACATT	AGCTTCGATA	TAATCTGATA	14340
CTTCACTTGT	CCCAGCTGTC	ATTGGTACAA	AGTTATGACG	CATAGCTTCG	ATGGTGACGA	14400
TAGCTTCTAC	TGCACCCGCA	GCCCCAGCA	AATGTCCTGT	AAAAGACTTG	GTTGATGATA	14460
CAGGTA	CTTACCAAGA	ACAGCTACGA	TAGCACCCT	TTCTCCTTTT	TCATTGGCAG	14520
GAGTTGACGT	TCCGTGAGCA	TTGACATAGG	CTACTTGCTC	TGGAGAAATC	TCAGCTTCTT	14580
CCAAGGCTAG	TTTGATGGCC	TTGATAGCTC	CCTGACCTTC	TGGATGTGGA	GAAGTCATGT	14640
GGTAGGCATC	ACAAGTATTT	CCGTAACCAA	CCACTTCAGC	CAGGATAGTA	GCTCCACGTT	14700

TTTCAGCGTG TTCAAGACTT TCTAGAACCA ACATCCCTGA ACCTTCACCC ATAACAAACC	14760
CATTGCGATC CTTATCAAAT GGGATCGAAG CACGAGTTGG ATCCTCTGTA GTAGAGAGAG	14820
CTGTTAAGGC TTGGAACCA GCGATGGCAA AAGGTGTGAT AGAAGCTTCT GTTCCTCCCA	14880
CCAACATCAC ATCTTGAAA CCAAACCTAA TGGAGCGGAA GGCATCCCCA ATCGCATCAT	14940
TTGATGAAGA GCAGGCAGTA TTGATAGATT TACAAACACC GTTTCACCA AAACGCATGG	15000
CTACATTCCC AGAAGCCATA TTTGGTAAAG CTTTGGGAAG AGTCATTGGT TTGACACGTT	15060
TGGGTCTTTT TTCATGAAGG CGAAGTACCT GATCTTCAAT TTCCTTGATT CCACCAATAC	15120
CAGATGCAAC GATAACACCA AAACGATCCC TATTAAGAGC CTCTACATCA AGATTGGCAT	15180
GATTTACAGC CTCTGGGCT GCATACAAGG CATATAAAGA ATAGTTATCA AAACGGTTGG	15240
TATCTTTTTT TACAAAGTAT TTATCGAAGG GAAAATCTTG GATTTCTGCC GCATTATGCA	15300
CATCAAAGTC ACTATGATCA AATTTTGTA TGCCACCAAT GCCGATTTTC CCAGTTGCTA	15360
AACTATTCCA AAATTCTTCT GGTGTATTTC CGATTGGAGA TGTTACTCCA TAACCTGTTA	15420
CCACTACTCG ATTTAGTTTC ATTCTTTTCA CCTCTAGCTT TCGCTACATA CTTAAGCCAC	15480
CATCAATGGC AACCCTTGT CCAGTTAGAT AATCTTGGCC TGCTAAAAAT ACTGTCAAAT	15540
CTGCAACCTG CTCTGCCTGC CCAAATCTT TCATCGGAAT CTGAGCTAGT GTAGCTTCCT	15600
TAATCTTATC TGACAGGATA GCGGTCATAT CAGACTCAAT CATTCCTGGA GCAATCACAT	15660
TGACTCGTAT ATTCCGACTA GCGACCTCGC GTGCCACAGA CTGGGTAAAG CCAATCAAGC	15720
CAGCCTTAGA AGCAGCATAA TTAGCTTGAC CAATATTTCC CATCAAACCA ACAACACTAG	15780
ACATATTAAT GATAGCACCT TCTCTGGCTT TCATCATCGG TTTCAAGACT GATTGTGTCA	15840
TATTAAAGGC ACCAGTCAGA TTGACCTTGA GCACTTTTTC AAAATCTGCT TCTGTCTCT	15900
TGAGCATAAG AGTATCTTGG GTAATCCCTG CATTGTGAC CAAAACATCT ACTGAACCCA	15960
GTCTGCAAT AGCTTGATCA ATCATACGCT TAGCGTCTGC AAAATCTGAT ACATCTCCTG	16020
AAATGGGAAC CACCTTGATA CCATAGTTTG AAAACTCAGC GAGCAATTCT TCTGAGATTG	16080
CCCCACGACT GTTTAAGACA ATGTTGGCTC CTGCTTGAGC AAACCTGTGG GCGATGGCAA	16140
GACCAATTCC ACGACTCGAA CCTGTAATAA AGATATTTTT ATGTTCTAGT TTCATTTTTT	16200
TCCTTTCAAA ACTTCTACTT ATTTTAGTCT ATTTTCTAA AAGTGCTACT AAACCTGCTT	16260
GATCTTCCAC ATGAGCTAAG TGAGCAGTTT GATCAATTTT TTTAACAAAA CCTGACAAGA	16320
CTTCCCCGG TCCAATCTCG ATAAAGTTGC TTATGCCTGC TTCTTGATG ACCCCAATAC	16380
TTTCATAGAA ACGAACGGGT TCCTTGACCT GACGCGTCAA GAGCTGAGCA ATGTCCTCTT	16440

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TTTGCATCAC AGCAGCTTCT GTATTGCCGA CTAGGGGACA AGTAAAATCT GAAAACTTA	16500
CCTGAGCTAG AGTTTCAGCT AGTTTCTGGC TAGCAGGTTC AAGGAGAGCG GTGTGAAAGG	16560
GACCTGACAC CTTAAGAGGA ATCAAGCGTT TGGCACCTGC TTCTTGCAAA AGTTCAACCG	16620
CTCGATCAAC TGCAACCACT TCTCCAGCAA TGACGATTTG TGCAGGTGTG TTATAGTTGG	16680
CTGGAGTAAC CACTCCAAGT TCAGAAGCTT TTTGACAGGC TTCTTCAATG ACCTCTACTG	16740
GCGTATTGAG AACTGCTACC ATCTTGCCAG AGTCAGCAGG AGCCGCTTCT TCCATATAGG	16800
CTCCACGCTT AGCTACCAAG GCAACCGCAT CTTCAAAATC CAAGGCGCCA CTTGCCACCA	16860
AGGCAGAGTA TTCTCCAAGA GACAAACCAG CAACCATATC AGGCTGATAG CCCTTTTCTT	16920
GCAATAAACG GTAGATAGCA ACCGAAGTCG CTAGAATGGC TGGTTGCGTA TAGCGGGTCT	16980
GATTGAGTTT GTCTTCTTCC GTATCGATGA GATAACGCAA ATCATAACCG AGCACCTGGC	17040
TCGCTCGATC AATCGTTTCT TTAACAATCG GATACTGATC ATAGAAATCC CGTCCCATCC	17100
CTAGATACTG GGCACCTTGA CCAGCAAATA AAAAGGCTGT TTTAGTCATT TCTTACAACT	17160
CCTGTCCAGC GAGAGGCTTC TTCTTGAATT TTCTTAGCGG CTCCGTAATA CAAATCTTTT	17220
AGGATTTCTT CAGCTGTTTC TTCTTTAGAA ACAAGCCCTG CGATTTGACC TGCCATAACA	17280
GAGCCACCAT CCACATCACC GTGAACAACT GCTTTGGCTA GAGCACCTGC TCCCATTGT	17340
TCAAAGATTT CTAATCAGG ATCTTCTTGC TTAAAGGCAT CTTTTTCAGC CAGTTCAAAA	17400
TCTCTAGTCA ACTGATTTTT AATAGCACGA ACAGCATGAC CAAAGTGCTG AGCTGAAATC	17460
GTAGTATCAA TATCCCTTGC TTTTAAAATT TTCTCCTTGT AGTTTGGATG GGCATTCGAC	17520
TCTTTTGCAA CTACAAACCG TGTCCCCACC TGTACAGCCT CTGCACCTAG CATAAAGCCA	17580
GCCGCAGCAC CTTCAACATC CGCAATTCCCT CTTGCAGCAA TAACAGGAAT AGATATAGCT	17640
GTGGCTACCT GTCGCACCAA GGTCATGGTT GTTAATTTAC CGATATGCCC CCCAGCTTCC	17700
ATTCTTCTG CAATAACAGC GTCTGCACCG ATTTTTTCCA TGCGTTTAGC TAAAGCGACA	17760
CTAGGAACAA CAGGAATAAC GATTATCCCA GCTTCATGGA AACGTTCCAT ATACTTGCTT	17820
GGATTTCCCTG CTCCTGTTGT GACAACTTTA ACACCTTCTT CAATAACGAG ATCCACGATG	17880
TCTTCCACAA AGGGAGATAA GAGCATGATG TTGACCCCAA AGGGTTTATC AGTCAATGAT	17940
TTGATTTTAT CAATATTGGC CTTGACAACT TCTTTCGGG CATTTCCTCC ACCGATAATT	18000
CCTAATCCTC CAGCCTTGGA AACAGCCCCT GCCAAATCAC CATCAGCAAC CCAGGCCATC	18060
CCTCCTTGGA AAATAGGATA ATCAATCTTC AATAATTCTG TAATACGCGT TTTCATAGTG	18120
CCTCCAACCT TCCTTGCTTA CGTAATAGTT CGATTTCAAC ATAATTGAC AGTCAAACTA	18180
TTACCTAAAC AAGAGGGAGT GGGTTTCTCC CTACTCCTTC TACTAATATT CTGCTTATTT	18240

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TGCTTGCTCT TCAACGTAAG CAACCAAGTC ACCAACTGTT TTCAAGTCAT TTTCTGCTTC	18300
GATTTGGATA TCAAAAGCAT CTTGATTTTC TGAGATTACT TGGAACAAGT CCAATGAATC	18360
TGCGTCCAAA TCATCAAAAG TTGATTCAAG TGTACTTCT GATGCGTCTT TTCCAAGTTC	18420
TTCAACGATA ATTTCTTGTA CTTTTTCAAA TACTGCCATG ATAGGACTCC TTTAAATAA	18480
ATAGTTTTTT TATAACAATG TGTTCAACAC ATGATTACCT AAATTGTAAG AATGAGCGTG	18540
CCCCAGGTCA AGCCTCCACC GAAGCCTGAT AGAAGAACAG TCTGGCTACC ATCTAAAGGG	18600
ATGAGACCTT GTTCTACACA CTCTGAAAGT AAAATCGGGA TACTGGCTGC ACTGGTATTG	18660
CCATATTCCA TCATATTGGC TGGAAGTTTG GCTCGGTCAA CACCAATTTT TCTAGCCATC	18720
TTATCCAAAA TACGGTCATT GGCTTGATGA AGTAGCAGAT AATCCAAGTC TGTCACCTCT	18780
ATAGGAGATT CATCAATAGT CTGCTTGATA GACTTGGCTA CATCTCGAAT GGCAAAATCA	18840
AAGACTGTGC GTCCATCCAT CTTCAAAAAC GAATCTGCAC TTTCTTGATC TGAAAATGGA	18900
GAATGTAAAC CTGAATGCCC ATAAGTTAAA CACTCGTGC GACTTCCATC GCTATTGAGA	18960
CTCTCAGCTA AGAAATGCTC TTGCTCGCTA GCTTCTAACA AGACACCACC AGCACCATCT	19020
CCAAACAACA CAGCTGTTGA TCGATCCGAC CAATCGACTG CCTTAGAGAG GGTTCCTACTA	19080
CCAATCACCA AGCCTTTTGT AAAGCGACCA GAAGCGATAA ACTTTTCAGC AGTTGAAAGA	19140
GCAAAATACAA ATCCACTGCA AGCCGCGGTT AAGTCAAAAG CAAAGGCTTT ATTAGACCA	19200
ATATTAGCTT GAACACGAGC AGCTGTAGAG GGCATCATCG AATCTGGAGT AATGGTAGCT	19260
AGGATGATAA AATCCAGTTC TTCTCCTGTT ATTCCAGCTT TTGCCATCAG TTTCTTAGCA	19320
ACCTCTGTAG CCAAATCACT GGTAGATTCT GTTCTTGAAA TATGCCTTTG TCGTATTTCC	19380
GTTCGACTTG AAATCCACTC ATCATTGGTA TCCATAATCT GAGCCAAGTC GTGATTTGTA	19440
ACCACTTGCT CTGGCACATA ATGAGCAACC TGACTTATTT TTGCAAAAGC CATTATTTCA	19500
AATCCTCCAA AAATTGGTAA AGATTAGTCA AACCTTTACC CATGACAGCA ATTTCTTCCT	19560
CGCTCATGCC ATCAATAATT TTTTCTACCA TGGCCTGTG GAAGCGTTTA TGCAGTCTAT	19620
GAATCAAGCG ACCCTTCTTT GTCAAATGCA GATGCACCAC ACGACGATCC TGTTCGACC	19680
GAACTCGCTC AATGTAGCCC GG	19702

(2) INFORMATION FOR SEQ ID NO: 8:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 6211 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

GAAAAATTCC TCTCTTCTCT TGAAAAATTT TGA AAAAATG GTATGATAGT AACAA GTTAT	60
TTTAAAGAGG AAAGAAAGGG GAATAATGGA GAAAATCAGT TTAGAATCTC CTAAGACGGG	120
GTCCGACCTA GTTTTGGA AACTTCGTGA TTTAGGAGTT GATACCATCT TTGGTTATCC	180
TGGTGGTGCG GTTTTGCCTT TTTATGATGC GATATATAAT TTAAAGGCA TCGCCACAT	240
TCTAGGGCGC CATGAGCAAG GTTGT TTGCA TGAAGCTGAA GGTATGCCA AATCAACTGG	300
AAAGTTGGGT GTTGCCGTCG TCACTAGTGG ACCAGGAGCA ACAAATGCCA TTACAGGGAT	360
TGCGGATGCC ATGAGCGATA GCGTCCCTT TTTGGTCTTT ACAGGTCAGG TGGCGCGAGC	420
AGGGATTGGG AAGGATGCCT TTCAGGAGGC AGACATCGTG GGAATTACCA TGCCAATCAC	480
TAAGTACAAT TACCAAGTTC GTGAGACAGC TGATATCCG CGTATCATTA CGGAAGCTGT	540
CCATATCGCA ACTACAGGCC GTCCAGGGCC AGTTGTAAT GACCTACCAA AAGACATATC	600
TGCTTTAGAA ACAGACTTCA TTTATTCACC AGAAGTGAAT TTACCAAGTT ATCAGCCGAC	660
TCTTGAGCCG AATGATATGC AAATCAAGAA AATCTTGAAG CAATTGTCCA AGGCTAAAAA	720
GCCAGTCTTG TTAGCTGGTG GTGAATTAG TTATGCTGAG GCTGCTACGG AACTAAATGA	780
ATTTGCAGAA CGCTATCAA TTCCAGTGGT AACCACTTT TTGGGACAAG GAACGATTGC	840
AACGAGTCAC CCACTCTTTC TTGGAATGGG AGGCATGCAC GGGTCATTTC CAGCAAATAT	900
TGCTATGACG GAAGCGGACT TTATGATTAG TATTGGTTCT CGTTTCGATG ACCGTTTGAC	960
GGGGAATCCT AAGACTTTCG CTAAGAATGC TAAGGTGCC CACATTGATA TTGACCCAGC	1020
TGAGATTGGC AAGATTATCA GTGCAGACAT TCCTGTAGTT GGAGATGCTA AGAAGGCCTT	1080
GCAAATGTTG CTAGCAGAAC CAACAGTTCA CAACAACACT GAAAAGTGGG TTGAGAAAGT	1140
CACTAAAGAC AAGAATCGTG TTCGTTCTTA TGATAAGAAA GAGCGTGTGG TTCAACCGCA	1200
AGCAGTTATT GAACGAATTG GTGAATTGAC GAATGGAGAT GCCATTGTGG TAACAGACCT	1260
TGGTCAACAC CAAATGTGGA CAGCTCAGTA TTATCCCTAC CAAAATGAAC GTCAGTTAGT	1320
GACTTCAGGT GGT TTGGGAA CAATGGGCTT TGAATTCCA GCAGCAATCG GTGCTAAAA	1380
TGCTAACCCA GATAAGGAAG TAGTCTTGT TGTGGGGAT GGTGGTTTCC AATGACCAA	1440
CCAGGAGTTG GCTATTTTGA ATATTTACAA GGTGCCAATC AAGGTGGTTA TGCTGAACAA	1500
TCATTCACTT GGAATGGTTC GCCAGTGGA GGAATCCTTC TATGAAGGCA GAACATCAGA	1560
GTCCGTCTTT GATACCTTC CTGATTTCCA ATTGATGGCG CAGGCTTATG GTATTAAAA	1620
CTATAAGTTT GACAATCCTG AGACCTTGGC TCAAGACCTT GAAGTCATCA CTGAGGATGT	1680

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TCCTATGCTA ATTGAGGTAG ATATTCTCTG TAAGGAACAG GTGTTACCAA TGGTACCGGC	1740
TGGTAAGAGT AATCATGAGA TGTGGGGGT GCAGTTCAT GCGTAGAATG TTAACAGCAA	1800
AACTACAAAA TCGTTCAGGA GTCCTCAATC GCTTTACAGG TGTCTATCT CCGTCAGG	1860
TTAATATTGA AAGCATCTCT GTTGAGCAA CAGAAGATCC GAATGTATCG CGTATCACTA	1920
TTATTATTGA TGTGCTTCT CATGATGAAG TGGAGCAAAT CATCAAACAG CTCAATCGTC	1980
AGATTGATGT GATTCGCATT CGAGATATTA CAGACAAGCC TCATTTGGAG CGCGAGGTGA	2040
TTTTGGTTAA GATGTAGCG CCAGCTGAGA AGAGAGCTGA GATTTAGCG ATTATTCAAC	2100
CTTTCCGTGC AACAGTAGTA GACGTAGCG CAAGCTCGAT TACCATTAG ATGACGGGAA	2160
ATGCAGAAAA GAGCGAAGCC CTATTGCGAG TCATTCGCCC ATACGGTATT CGCAATATTG	2220
CTCGAACGGG TGCAACTGGA TTTACCGCG ATTAATAATC CAACTTAAAT TTATTAAACC	2280
AGCCTAAAAG GCAATAAATA ATAGAAAAGA GAGAAAAGCT ATGACAGTTC AAATGGAATA	2340
TGAAAAAGAT GTTAAAGTAG CAGCACTTGA CCGTAAAAA ATCGCCGTTA TCGGTTATGG	2400
TTCACAAGGG CATGCGCATG CTCAAAATT GCGTGATTCA GGTGCGTACG TTATTATCGG	2460
TGTACGTCCA GGTAAATCTT TTGATAAAGC AAAAGAAGAT GGATTGATA CTTACACAGT	2520
AGCAGAAGCT ACTAAGTTGG CTGATGTTAT CATGATCTTG GCGCCAGACG AAATTCAACA	2580
AGAATTGTAC GAAGCAGAAA TCGCTCCAAA CTTGGAAGCT GGAACGCAG TTGGATTGTC	2640
CCATGGTTTC AACATCCACT TTGAATTTAT CAAAGTTCCT GCGGATGTAG ATGTCTTCAT	2700
GTGTGCTCCT AAAGGACCAG GACACTTGGT ACGTCGTACT TACGAAGAAG GATTTGGTGT	2760
TCCAGCTCTT TATGCAGTAT ACCAAGATGC AACAGGAAAT GCTAAAAACA TTGCTATGGA	2820
CTGGTGTAAG GGTGTTGGAG CGGCTCGTGT AGGTCTTCTT GAAACAATT ACAAAGAAGA	2880
AACTGAAGAA GATTTGTTTG GTGAACAAGC TGTACTTTGT GGTGGTTTGA CTGCCCTTAT	2940
CGAAGCAGGT TTCGAAGTCT TGACAGAAGC AGGTACGCT CCAGAATTGG CTTACTTTGA	3000
AGTTCTTCAC GAAATGAAAT TGATCGTTGA CTTGATCTAC GAAGGTGGAT TCAAGAAAAT	3060
GCGTCAATCT ATTTCAAACA CTGCTGAATA CCGTGAATAT GTATCAGGTC CACGTGTAAT	3120
CACTGAACAA GTTAAAGAAA ATATGAAGGC TGTCTTGCA GACATCCAAA ATGGTAAATT	3180
TGCAAATGAC TTTGTAAATG ACTATAAAGC TGGACGTCCA AAATTGACTG CTTACCGTGA	3240
ACAAGCAGCT AACCTTGAAA TTGAAAAAGT TGGTCAGAA TTGCGTAAAG CAATGCCATT	3300
CGTTGGTAAA AACGACGATG ATGCATTCAA AATCTATAAC TAATTAGAAA TATATAGCGC	3360
TGGAGATGAT TTTATGAAAA AGATTATGAG AAAAATTGCA TCGTTATTAT TGGTTCTAGT	3420

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TGTATAATGT AATTACACCG TCGGTAATAG TGCTAGCAGA CCAAAATAAA GCAGATTGGT	3480
CGTATGATGA AAATGCTGTA ATTAACATTT ATGATGATGC TAATTTTGAA GATGGTAGGT	3540
TGCATATGAA CTTTGAACAA TTCTTCAAAT TGGCACAAAT AGCTAGAGAA GAAGGTCTTG	3600
AAATTCATTC TCCGTTTGAG AGAGCTGGTG CGACTAAATC TGCTCGTTAT ATAGCGAAAT	3660
GGATTTTGAG AAATAAAAAA CATTAACAAA TATAGTTGGT AAATCATTAG GACCTAAATC	3720
AGCTGTTAGA TTCGGAGAAG CTTTATCCTA TATTGAAGGT CCTCTTCGCA GAATAAATGA	3780
GACGATAGAT GGCGGTTTAT ATCAAATAGA GCAAATTATT GCATCTGGAT TGAAGAATC	3840
GGGTTTAAAT GACTGGACTG CGAAAACTTT AGCTTCAGCT ATTCGTGGGA TATTAGATGT	3900
ACTTATTTAG GGGTTGAAAT CATATGAATA TTACCAATTT GTTTTCTATC AAGACAGGAT	3960
GTGATGAAAC TGATAGGCAA CTGCAAAAAC TATTTTTCAT GTTGGATTTA CAATTGGGAG	4020
AATTGACAGA TCAACTAAGA AAATTAGATT CTAATTTTGT TCCTCGTAGT CAATTTGTAG	4080
ACACGTGGA TTTGAATGAT GTAGAATATA AAGAAATTTT AAACATTTT ATCTTCCATC	4140
GTAATGATAG TGAAGAAAGT TTGGTAGAAT GGTATATGA TTGGATTTCC ACAAATCGTT	4200
ATGAACTTCC TAAAGAGTTT TCGATTGTA TGGCTCATAA ATACCATGAA AGTGTTACTG	4260
AAGTTTTCGG AGATGAATAA CTAAAAACA GTCATTAGTG ACTGTTTTT ATAGAAAAAG	4320
AGGTTTATA TGTAAAGTTC AAAAGATATA ATCAAGGCTC ACAAGGTCTT GAACGGTGTG	4380
GTTGTGAATA CTCCACTGGA TTACGATCAT TATTTATCGG AGAAGTATGG TGCTAAGATT	4440
TATTTGAAAA AAGAAAATGC CCAGCGTGTT CGCTCCTTTA AAATTCGTGG TGCCTATTAT	4500
GCCATTTCCC AGCTCAGCAA GGAAGAACGT GAACGTGGGG TAGTCTGCGC TTCTGCGGGA	4560
AATCATGCGC AGGGAGTAGC CTATACCTGT AATGAAATGA AAATTCCTGC TACTATCTTT	4620
ATGCCCATTA CTACGCCACA ACAAAGATT GGTGAGGTTG GCTTTTTTGG TGGGGATTTT	4680
GTAACATTA AACTAGTTGG AGATACCTTT GATGCCTCAG CCAAAGCAGC TCAAGAATTT	4740
ACAGTCTCTG AAAATCGTAC CTTTATTGAT CCTTTTGATG ATGCTCATGT TCAAGCAGGT	4800
CAAGGAACAG TTGCTTATGA GATTTTAGAA GAAGCTCGAA AAGAATCGAT TGATTTTGAT	4860
GCTGTCTTGG TTCTGTGG TGGTGGCGGT CTCATTGCCG GGGTTTCTAC CTATATCAAG	4920
GAAACAAGTC CAGAGATTGA GGTATCGGA GTAGAGGCGA ATGGAGCGCG TTCCATGAAA	4980
GCTGCCTTTG AGGCTGGAGG TCCAGTAAAA CTCAAGGAAA TTGATAAATT TGCTGATGGG	5040
ATTGCTGTGC AAAAGGTAGG TCAGTTGACC TATGAAGCAA CTCGTCAACA TATTAAACT	5100
TTGGTAGGTG TCGATGAGGG ATTGATTCTT GAAACCTTGA TTGACCTTTA CTCTAAGCAA	5160
GGGATAGTCG CAGAACCTGC TGGAGCGGCT AGTATCGCCT CTTTAGAGGT TTTAGCTGAA	5220

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TATATTAAGG GGAAAACCAT TTGTTGTATC ATTTCTGGAG GAAATAATGA TATCAACCGT 5280
 ATGCCAGAAA TGGAAGAGCG TGCCTTGATT TATGATGGTA TCAAACATTA CTTTGTGGTC 5340
 AATTTCCAC AACGTCCAGG AGCTTTGCGT GAGTTGTAA ATGATATCCT GGGGCCAAAT 5400
 GATGATATCA CACGTTTGA GTATATCAA CGAGCTAGCA AGGGAACAGG CCCAGTATTA 5460
 ATTGGGATCG CTTTAGCAGA TAAGCATGAT TATGCAGGT TGATTCGTAG AATGGAAGGT 5520
 TTTGATCCAG CTTATATTAA CTAAATGGT AATGAAACGC TTTATAATAT GCTTGTCTGA 5580
 GGACTAATAA AAAAATATCA TACCTTCATT TTGATTCCT ATCTATTGAC AAGCATAGTC 5640
 ACACTGTCTT TAATACTCTT CGAAAATCTC TTCAAACCAC GTTAGCTCTA TCTGCAACCT 5700
 CAAAACAGTG TTTTGAGCAA CTGCGGCTA GCTTCCTAGT TTGCTCTTG ATTTTCATTG 5760
 AGTATAAGGT ATGATTGAT TTCTTTTGT TGACAAATAT ACTATATTAA AAAGATATAT 5820
 AAGTAATTAA CTGAGCTTAT CTGTCTTGT ATCTCTATTA AGGATGGTT AGATAATCGG 5880
 GTGTCTGCTT CTAGGCTAGC ACCTCAATAT CCAAAGGAGT GATGAATTG AAGGACATAA 5940
 GGAATACCTA TCTCTCAGAT GATTTATTGA GGAAGAAAGA TAGGAGTTT TGAGCTAGTG 6000
 AAGGCTTGA TTTCTAAAG TTAGAACTAT CATCTTCAGT TCTTAAATCG AAGAAATAAG 6060
 CTATCTTACG GAAATAGAGA AGCATTTTT AAGAACTGA ATAATTTTCGC ACCTTAAGAG 6120
 GGTAAATAA CAGTATTTTT ATTAGCAAAT ATTTATGGTG TAGAGGCTAG CAAAACCTAT 6180
 ATATTATCGG ATTTAAAAG GAAGTAAGAA A 6211

(2) INFORMATION FOR SEQ ID NO: 9:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 7939 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:

CCGGACTCCC CACGATTCTT CAAAATAACT GAGTATATTT CTATCTTGAT TTTCAGATAT 60
 AAATTCTTCC TTCTGTGGCC TCTTCTTACG CTTGAGAAGA GCTTCTCCGA CATGGCTTCT 120
 TCCTTACTGA GCAAACCTT GAGCATAGAT AAGTTTGA CTGCAAGCGTG CTCTTGTATA 180
 TTTGGCTCCC TTCCCACTAT TGTGGATAGC GAGGCGTCTT CTCATATCAG TCGTATAGCC 240
 TATATAGTAG GATCCATCAC GACACTCCAG AACGTACATA TAAGCCTTAT GATCCATAAT 300
 AAATCTCTTC GATTCGGGC GTATAAGAGC CATCATCATT GTGGACAATC AAAGGAGGTA 360

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AGACCTTAAA GCCACTTGTT GAGCCATCCT TGATCGCCTC AATCAAAAGC ATATTGGCTT	420
CCTTTTCTCT TTTTGGATAA ACAAACCTGCA GCGCCTTAGG GGCTAGATTA TGTCGTTTTA	480
ACGTATCCAA AATATCCAGA AGTCGATCAG GACGATGAAC CATGGCCAAA CGCCCATAG	540
ACTTGAGAAT ACTCTGGGCA CTACGACAGA TTTCTTCCAA ATTAGTCGTG ATTTCTGTGC	600
GAGCCAAGAG ATAATGTTCA CTCTCGTTCA GATTAGAATA AGGATTCACC TTGAAATAGG	660
GTGGATTACA CAAAATCATA TCCACCTTAC TCCCCTGAAT GTGAGCAGGC ATATTTTTC	720
AATCATCGCA GATGACCTGC ATTTGCTCCT CTAATCCATT CAAACGGACA GAGCGTTCAG	780
CCATATCCGC CAAACGCTCC TGAATCTCAA CAGACAATAT CTGTGCTTGA GTACGAGTGC	840
TAGCAAAAAG CCCCCTGCT CCATTTCCAG CACAGAAATC CACAATCAAC CCCTTCTTAG	900
GAAAACGTGG AAATCGTGAT AAGAGAACAC TATCCACCGA ATAGCTAAAA ACCTCTCTAT	960
TTTGAATGAT TTTGATATCT GTCGAAAAGA GCTGGTTAAT GCGCTCTCCT GATTTTAATA	1020
ATTGTCTTTC TTCCATGGTC CTATTATAGC AAATTCATAT TAACATTACA AAAAATATAA	1080
AACTCTAAAC TACTTCTTCT TTTTAAATG GTGCAGGGCT TCTCCAGTCC AGATTGGTAG	1140
CATTCGTCGA AAGGGAGCAA AGCCGTAGTT AAAGCGGTCG CTTGAAAAGC GTCTCCGTCT	1200
AGGAAACTGG TACTTTTCTT CCTCCAAAGT GCGGATAGAA AGACTGGCTT TCCCTGTAAA	1260
TTCATCTAAA TCCACTACCT GAACTTGAAC CTCTTCATCG ACTTTCAAGG TTTTCATGAAT	1320
ATTTTCAATA AATCCTGTCC GAATCTCTGA AATGTGAATC AGCCCCGTAT CACCCGTCTC	1380
TAACCTAACA AAGGCACCGT AGGGCTGAAT CCCTGTAATA CGCCCCTTTA GCTTATCACC	1440
GATTTTCATC TTAGTCCTCG ATTTCATAG TTTCAATTAC AACATCTTCA ACTGGCTTGT	1500
CCATAGCTCC TGTCTCAACA GCAGCAATGG CATCCAAGAC AGCGTAAGAT GCTTCATCAG	1560
CTAACTGACC AAAAACCGTG TGACGGCGGT CTAGGTGAGG TGTCCACCT TGATTGGCAT	1620
AGATTTCTGC AATCGGTTCT GGCCAACCAC CACGAGTAAT TTCTTTCTTA GAATAAGGTA	1680
GGTGTGGTT TTGCACGATA AAGAACTGGC TGCCGTTGGT ATTTGGACCA GCATTTGCCA	1740
TGGAAAGAGC ACCACGGATA TTGTAAAGCT CTCTGAGAA TTCATCCTCA AAAGATTCGC	1800
CGTAGATTGA CTCGCCACCC ATACCAGTTC CAGTTGGGTC TCCACCTTGG ATCATAAAGT	1860
CCTTGATAAT ACGGTGGAAA ATGACACCAT CATAGTAGCC ATCTTTTGAA AGAGATACAA	1920
AGTTAGCCAC TGTTTTAGGA GCATGTTTCTG GGAAGGCTT GATACGTAAG TCTCCGTGAT	1980
TGGTCTTAAT AGTCGCAAGA GGACCTTCTA CTGTTTCAAT GTCTACTTGT GGAAAATGCA	2040
ATTCTTTTTC TACCATACCA AATACTTCTA AGGCAGCAAA AATGCCATCT TCTTCTAATG	2100
TTTTTGTAAT ATAATCTGCT TTTTCTTTGA TTTTATCATG AGAAATTCCC ATGGCAACGC	2160

TGATTCCAGC ATAATCAAAG AGTTCCAAGT CGTTGAGACC ATCTCCAAAA ACCATGACCT	2220
TCTCTGGTTT CAAGCCAAGG TGTTCACAA CCTTTCCAC CCCCCTCGCT TTGGAGCCTG	2280
AAATCGGCAC AATATCAGAC GAATGTTGAT GCCAACGAAC CATGCGAAGT TTGTCTGAGA	2340
GACTGTCAGG CAAGTGCAAG TCATCTCCCT TATCTTCAA AGTCCACATC TGATAGATAT	2400
CTTCTTTTTC ATGGAAATCG GGATCTACAT CTAAGTCGGG ATAAATTGGA TTGATAGCTT	2460
CACTCATCAT ATCGGTGCGA GTCGACAACT TGGCATCATG ACTCCCAACC AAGCCATACT	2520
CAATTCCTTC TTGCTTAGCC CAAGAGATAT ACTCCTCAAC ATCTGACTTT TCAATCTGAT	2580
GCTGATAAAT GACCTGACCT TTTTATCTT CGATATAAGC CCCATTCAA GTTACAAAAA	2640
AGTCAGGCTT GAGATCACGA ATCTCTGGAA CAACACCAA AATGCCACGT CCAGAGGCGA	2700
TTCTGTGTAA AATTCCTTTT TCACGCAACT GTTTAAAAAC AGTGGGAATT GTAGTTGGAA	2760
TAAACCCTGT CTTTGAATTC CGCAATGTAT CATCAATATC AAAAAAGACA ATCTTGATCT	2820
TCTTTGCCTT GTATCTTAAT TTCGCGTCCA TCTCACTACC TCTTTCAATC TAACTCTTTC	2880
CATTATATCA TAAAGTAGGC AAATCCCCTA TTTTCAAAAA GTTTATCATT TTTATTTTAA	2940
TTTCTTGGAT GAGAAAAGAG ACATATTTAT GAAAAGCTC CATCGTGCTT TTAATGTGTT	3000
CTCTTGTTTT CAACTCGTA AAAAGGGAGC CACTGATCCT AACTCGCTCT CTCATTTCAA	3060
AGCTTGTAAG AAAAGACCCG TTGGGGTCTT AATTCGCTTT CTGTGTTTCA AGCTCATGAA	3120
AAAGAGACCC AACTGGGTCT TTTCTTTAAT CTTGTTTAC GAAAGGCATC AAAGCCATTA	3180
CGCGAGCGCG TTTGATAGCT GTTGTACTT TACGTTGGT TTTAGCTGAA GTTCCTGTTA	3240
CACGACGAGG AAGGATTTTC CCACGTTCTG AAACGAAACG GCTAAGAAGC TCAGTATCTT	3300
TGTAATCAAC ATATTCAATT TTGTTGCTG CGATGTAATC AACTTTTTTA CGGCGTTTGA	3360
ATCCGCCACG ACGTTGTTGA GCCATGTTTT TTCTCCTTTA TAAGTTTAGT TGTCCATTAG	3420
AATGGTAAAT CATCATCTGA AATATCCAAT GGGTTTGTG CTCCAAATGG ATTTTCATTA	3480
CGTGAAAAGT CTGGTACTGA ATTTGTAGGT GCTGAATAGT TTGCAGTTGG TGCAGAGTAA	3540
GCTCCACCTG TGTGACCCTC ACGCACACTA CGGCTTTCCA ACATTTGGAA ATTCTCAGCC	3600
ACGACCTCTG TCACGTAGAC ACGTTGTCCT TGCTGGTTAT CGTAACTACG AGTCTGGATA	3660
CGACCTGTCA CCCCATAAG TGAGCCTTTT TTAGCCAGT TAGCAAGATT TTCAGCCTGT	3720
TGGCGCCACA TAACGACATT GATAAAATCA GCCTCACGTT CACCATTTTG ACTCTTAAAT	3780
GTACGGTTTA CTGCAAGAGT AAAAGTCGCA ACTGCTACAT TTGATGGGGT ATAACGCAAC	3840
TCAGCGTCAC GTGTCATACG CCCTACAAGT ACAACATTGT TAATCATAGT TTACCTTCTT	3900

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ACGCGTCAAT	TTTGACGATC	ATGTGACGAA	GAATGTCAGC	GTTGATTTTT	GAAAGACGGT
CAAACTCTTT	AAGAGCTGCA	TCGTCATTTG	CTTCAACGTT	AACGATGTGG	TAAAGTCCTT
CACGGAAATC	TTGGATTTCG	TATGCAAGAC	GACGTTTTTC	CCAAGTTTTT	GATTCAACAA
CAGTTGCACC	GTTGTCAGTC	AAAATAGAGT	CAAAACGTGC	TACCAAAGCG	TTTTTAGCTT
CTTCTTCAAT	GTTTGGACGA	ATGATATAAA	GAATTTTCGTA	TTTAGCCATT	GATATGTTCC
TCCTTTTGGT	CTAATGACCC	CAAGACTTTG	CAAGGGGTAA	GTGAGGTTTCG	CTCACAATAA
ACTATTATAC	TAGAAAAAAT	TTTTTTACGC	AAGTAAAAAC	ACTAGAATTC	GAAAAAACGC
CACATGGGCG	TTTTCCTGTT	CTTATGGTTT	GATACGGTGC	AACATACGTG	GGAATGGAAT
AGCTTCACGG	ATATGTTTTG	TTCCTGCTGC	GAAGGTACC	ATACGTTTCA	TACCGATACC
AAATCCTCCG	TGTGGAAGTG	TACCGTATTT	ACGAAGGTCA	AGGTAGAATT	CATATTCTGT
ACGATCCATG	CCAAGTTCAT	CCATCTTAGC	GACAAGGGCA	TCGTAATCTT	CCTCACGCAT
AGACCCACCG	ATAATTCTC	CATAGCCTTC	TGGAGCAAGC	AAGTCTGCAC	AAAGCACGCG
CTCTGGATTT	CCAGGAACTG	GTTTCATGTA	GAAGGCCTTG	ATGGCTGCTG	GATAGTTCAT
GACAAATGTT	GGCACACCAA	AGTGGTTTGA	AATCCAAGTT	TCGTGTGGTG	ACCCAAAGTC
ATCACCATGC	TCAAGATGCT	CGTAGTCAGC	ATCTTCATCA	TTTTCATGCT	CTTGCAAGAG
GTCAATGGCT	TGATCGTAAG	TGATACGTTT	GAATGGCTCT	GCAATGTAGC	GTTTCAAGAG
TTCTGTATCA	CGTTCCAAGG	TTTCCAAGGC	TTGAGGCGCG	CGGTCAAGAA	CACCTGTAG
AAGAGCTTTC	ACATAAGCTT	CTTGCAAGTC	AAGCGACTCA	TCATGTGTCA	AGTATGAGTA
CTCAGCATCC	ATCATCCAGA	ACTCAGTCAA	GTGACGGCGT	GTTTTTGATT	TTTCAGCACG
GAAAACTGGA	CCAAAGTCAA	AGACACGACC	AAGAGCCATA	GCCCCTGCTT	CTAGGTAAAG
CTGACCTGAT	TGGCTCAAGT	AGGCTGGCGT	TCCGAAGTAG	TCAGTTTCAA	AGAGTTCTGT
AGAATCTTCT	GCCGCATTTT	CTGAAAGAAT	TGGGCTGTCA	AACTTCATAA	AACCGTTCTT
GTCAAAGAAC	TCATAAGTTG	CATAGATAAT	AGCGTTACGG	ATTTGCAACA	CAGCTACTTG
CTTACGAGAG	CGTAGCCACA	AGTGACGGTT	ATCCATCAAA	AAGTCTGTTT	CGTGTCTTTT
TGGTGTGATT	GGGTAGTCTT	GAGATTCACC	GATCACTTCG	ATGTCTGTGA	TGTCCAACTC
ATAGCCAAAT	TTAGAACGTT	CGTCCTCTTT	GACAATACCT	GTCAATATAA	CAGACGTTTC
TTGGCTCAAG	CGTTTGATAA	CATCAAACCT	CTCAAGTCCC	ACTTCTTCAC	CAAATTTTTT
GACAAAGTTT	GGTTTAAAAG	CCACACCTTG	AAAGAAGGCT	GTTCCATCAC	GCAATTGTAA
GAAAGCGATT	TTTCCTTTTC	CTGATTGTGT	GGCAACCCAA	GCGCCAATCG	TCACTTCCTG
ACCAACATAG	TCTTTTACGT	CAATAATCGT	TACACGTTTT	GTCATTATTT	TTCTTTTCT

TTTTTATCTT	TTATGGCAAA	CCACCTCTAT	ATTGTTCCCA	TCCAGGTCAA	TCATAAAAGC	5760
AGCATAGTAA	ATCGGATGCT	CACTTCGATA	ACCAGGAGCC	CCATTGTCTC	GCCCACCTGC	5820
CTCTAAGCCA	GCCTCATAAC	AAGCCTGAAC	TTCTTCCTTA	TTTCTGCTA	AAAAAGCAAA	5880
ATGAACAGGA	TCTTGTTGTC	CCTGAGTCAG	CCAAAAATCA	CCACCAGGAT	GAGGGCTGTT	5940
CGGGGATAGA	AAACTAATTA	GAGAACTAGT	CTTAAAAGCC	AATTTATAGT	CCAAAGGAGC	6000
GAGAAAACCTC	CTATAAAATC	CTTATGAAAT	TTGTAAATCC	TTTACCTTAA	TCTCAAAATG	6060
ATCAATCATT	CTCACTACCC	ATAAATGCTT	TCAAGCGTTC	GACTGCTTCT	TTAAGCGTGT	6120
CTAGGTCTGT	CGCATAGCTG	AGGCGGACAT	TTTCTGGTGC	TCCAAATCCA	GCTCCTGTTA	6180
CCAAGGCCAC	TTGCGCTTCT	TCTAAGATAA	CAGTTGTAAA	GTCTGTCACA	TCCGTGTAGC	6240
CTTTCATCTC	CATGGCCTTT	TTGACATTTG	GGAAGAGATA	GAAGGCCCTT	TGCGGTTTGA	6300
CCACTTCAAA	TCCTGGTACC	TCTGCAAGGA	GGGGATAGAT	GGTATTAAGA	CGTTCCTCAA	6360
AGGCCTGACG	CATGCTTTCT	ACAGTATCTT	GCTCACCTGA	TAGAGCCTCA	ACTGCTGCAT	6420
ATTGGGCTAC	TGCTGACGGA	TTCGAAGTTG	TTTGACCTGC	AATCTTGGAC	ATGGCAGCGA	6480
TAATGTCTGC	TTCTCCAACG	GCATAACCAA	TCCGCCAACC	AGTCATGGCA	TAAGTTTATG	6540
ACACACCATT	GATGACCACT	GTTTGCTTGC	GAATCGCTTC	CGATAGGCTA	GAAATCGGTG	6600
TGAACTCATG	ACCATTATAA	ACCAAGCGGC	CATAGATATC	GTCTGCTAGG	ATGAGAATAT	6660
CATTTTCTAC	AGCCCAGTTT	CCAATTGCCA	AGAGTTCTCTC	ACGGGTGTAA	ATCATACCTG	6720
TGGGATTAGA	TGGCGAATTC	AGCACCAAAA	CCTTGGTCTT	GTCAAGTCCA	GCTGCTTCTA	6780
ACTGCTCTAC	GGTCACCTTA	AAGTGATTGT	CTTCCTTAGC	AGAAACAAAG	ACGGGAACGC	6840
CTTCTGCCAT	CTTGACCTGA	TCTCCATAGC	TAACCCAGTA	TGGGGTTGGG	ATGATGACTT	6900
CATCACCTGG	ATTGACCACA	GCCATAAAGA	AGGTATAGAG	AGAATATTTG	GCTCCCGCAG	6960
CGACTGTAC	TTGATTGAC	GCTACAGAAT	AGCCGTAAAA	GCGCTCAAAG	TAGCTATTGA	7020
CCGCCGCCTT	AAGCTCTGGC	AGACCTGAGG	TTACTGTATA	AAAAGAAGCA	CGCCCATCTC	7080
GAATCGATGC	AATGGCGGCA	TCTTGATAT	TTTTGGGAGT	AGTGAAATCT	GGCTCACCCA	7140
AGGTTAGAGA	CAAAATATCT	CTACCCTCAG	CCTTCAGTGC	TTTGGCACGG	GCTCCAGCAG	7200
CCAAAGTCAC	ACTTCTTCC	ATTTCTAAAA	CACGGTTGGA	TAGTTTCATA	GGCCCTCCTT	7260
GTTGACCAAT	GCTCCTGTTT	CAAAATCTAC	TAGATAAAAA	TCAGATCCTG	ACTTAACTTC	7320
CCAGATTGGC	TTATCTTGAT	AACGGCCAAA	GGTTATCTTG	TCAATCTCGC	CAGCTCCCTT	7380
TTCCCTTAGAA	ACCGTTTCTG	CTTTTCTTGT	TGAAACACCC	TGATTTAGCT	GATAAACGTA	7440

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AATCTTATGG TCATCTTTAC CAATCAGGAC AGCAAGCGCT TCTTGCTGTT TGTTACGACC	7500
AAGAACGCTG TAATAAGATT CCAAGCCATT GTATAAATCA ACCTGATCAG CCTGCTCTAA	7560
TCCTGCATAC TGCTGAGCTA ATTTTCTCCT TTCACTTTTA GCTGTTTGAT AGGGTTTCAT	7620
GCTAAGAGAA ACCATATACA GAAAGGAACC ACTGATAACC ACAAACAAAA TCGTCATCCC	7680
TAGACCATAC TGCCACAGTA GATTATTTTT TGCTTTGTTT TGTCTTTTTT TCACTCGTCT	7740
ATTTTACCAT CTATTAAGCT TTATTACAAG TGAATATAAG AATACTCTTC GAAAATCTCT	7800
TCAAACACG TCAGCTTTAT CTGCAGACCT CAAAGCTGTG CTTTGAGCAA CCAATCTAT	7860
TTCTCCCTTC AAACAAAACC GATTTTGAAA GTGAAACAGT TCTTACTTTT TCAGTCACAA	7920
ATGATTAGAG TTTGCCGGG	7939

(2) INFORMATION FOR SEQ ID NO: 10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9897 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

CCGCTCTACC GTCAAATAAT TACCATTTTG TTTAATACCG AAATTTTAT CTAAGAAAA	60
TTCAAGTTGGT CTGTTGGTAC GATCGTCGTA TACAGTACCA TTCTCAGAA TAGTATAATT	120
GTAATCAGTA TCACCTTGTT TCCTTAATTT AAGGTAATAA TTACCATCAA TTTGTTTATA	180
ACCTGAATCT TTTCTAGTTG CTCTCTAAA ACTTACTCCA GCAGGCATCA CATCAGCAAA	240
CATGAGTACT TGTTTGTCTT TTTTTC AACATAACAGAG TCAATATAGG TTGCACCACC	300
GCTGATTTGT AAGTCACGTC CACCAACTTC ACGAGGCCAT TCTAATGGTA CTGGCGCAAA	360
ATCATCGAAT GCCAATGTTA ATTTTGGTTT AGTCCATGTC TTACCATTAT CATCACTATA	420
ACTTGTAGCA ATATTAATTT TATTCAAGAA ATCATGAGTT CCACCGTAAC GAGCGTCAAT	480
GCTTGAAAAT ACCCGACCAT TGCTAAAAGT ATACAGAACT GGAATACGGA AATAGTTAGA	540
ACCTGTGTA TCATTAGCCG TATAAATTAA ATGTCCAGTA ACAGCGTTTG TTGTCATCTT	600
TTTAACAGTT TCTTCATCCA ATGCACTATT AAAGAATTTG ATATTTTCTA GTGTTCCGTT	660
AAAACCAAAC GCCGTTTTTC CTGCACGTTT CACTCCCCCA AGCATATAGT AATCAATACC	720
TTTAATATCC TTGATGTTTA GGAAATTATC CACTTCTTTT TCTACTACTT TTGTACCATT	780
TGCGTATAAA GAATATGTTT TTTTGAAGTA ATCTGCTACT ACTGCAACAG TGTTAGTCAC	840
AGCCTCTTGT TTGTAATTAC CCCAACTGA AGCAGGCTG GATACTAGGT TATTTTATT	900

GGAAGAAGTA TCACGCGCTT CCATCCCCAA CTCACCATTG TCTCTAAGGA ACACATCTAC	960
ATAACTATTT TGTGACCGG GTTTGGAATT AGATATCCA AACAGAGCTT GTAAGCCTTT	1020
CTCACTTGAC TGATTGTACT TAATCACTAC AGTAAAGTCA CCGCTAGTAA ATTTATCCTT	1080
TAACTCTTTA GTAACATTTT CTCCGCCCC TGTAAAGTA ACATTATTTT TTTCTAAGAC	1140
AGGAGTTTCT TCCGCTGTAG AAGATGGATC CTTAACAGTA GTTCAACTG TTCGAGGTTG	1200
TACAGTAACT TCCGAAGAGT TATCCGATGT AGGTTGTACT TCCGAAATCG GAGTCGTTGG	1260
TGCAACAGGT TGCACCAACT TTGGTGTTGA TACTTCAGAA GTTTCAGTCT CCTGAGCTGC	1320
AACTGAGTTA GCAACAAATG CTGATAATAC CACTACAGTA CCTAAGGTTA CATATTGTTT	1380
AATATTTTTT TTCATTTTAT TTTTCCTCGT TTAACCTTT GATAACAAGT TTTTAAACAG	1440
TTTCATCATT GCAATGAATC TTTGGTTGGT GAAGATCTTC TTCAAAGTC ACCAACATAT	1500
TCCCTGGAAG CAATTCAACA ATTTGATAGT CTTTGCTATC GTAAAAAGCA ATATCCTTCT	1560
CTTCGCTAAA AGGTACACGT GACTGGGCAC GAACTGGGA AGTTACTGCC ATTTTTTCAG	1620
TATTTTCAAC AACAATATGA ATATCTAAAT ATTTCTTATG AGTTTCAAAA ATATCTCCTG	1680
GAACTCCATC AGCTAGATAA GTCATACAAT TTGCAAAAAC ATTTTCCCCG TCAATATCAA	1740
TTTTTCCATC AACTAAATCT GTCAAATTTG TATTTTCTAA AAAATCACAG ACTTTTGAAA	1800
AATATTTTAT GACAGAAGCA TATCGTTTAA AATCAGATTG TTCAGAAATA ATCATATTAT	1860
TTTCTCTTTT CTATTAGTGA CGAACTTCCC AACTTGAATC CGCTTTAAT TCTGTAATAT	1920
CATGAATCGT TGTATATTTA GGTGCAGATA CTTTATTTCC AGTAAGAACA GATACAATAT	1980
AACCTGAAAC TACTGATACA GAGATTGAAA TCAATGAATA TGCCCAGTAG CTAACAGCTG	2040
TTGGAGGAAG GAAGTATTTA ATAAATACCA TGACGATGGT TGATACAATC AGCGCTGCAT	2100
AAGCACCTTG TTTATTTGCT TTTTGTAGAA CAAATCCAAG AATAAATACA CCACCAAGTA	2160
GACCAAGTAC AAGTCCCATG AACTATTGA ACCATTCTGT TGCAGATTTA ATATCTGAGT	2220
GAGCCATGAC AATGGAACA CCAATTGAGA ATAAACCTAC TGCTAGAGAT ACGAATTGTG	2280
CAATTTTCGT ACGACGATTG TCTGACATAT TTTTAGAAAT GACATCTTGA ATATCCAATG	2340
TCCATGAAGT TGCAACAGAG TTCAAACCTG TTGAAATAGT TGATTGAGAT GCTGCATAAA	2400
TCGCTGCCAA GATCAAACCT GTGATACCTA CTGGTAACTG GTATGCAATA AAGTACATAA	2460
AGATTTGGTC TTGAGGGATA TTGCTAGCTG CACTATCTGC ATTTTGTACT TGATAGAATA	2520
CGTACAAGCC TGTACCAATC AAGTAAAAGA CTGTTGCAGT TGCAAGTGAC AAAACACCGT	2580
TTGTGAACAA CATCTTATTA AGTTTCTTAA TATTTGTGTG TGTAGTAAAA CGTTGAACCA	2640

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AATCTTGAGA TGAAGCATAG GAAGACAAGA TTGTAAAGCC TGAACCCATC ACAATTAAAA	2700
AGATGGAGTT TGAAAGCAAG TTAGGATCGA AAAGTTTTC ATTTGCAGCA AGGAATTTCC	2760
CGTTTGCTAA TGTTCCTGCT ACTGCACCAA AGCCACCTTT AATATTAGCA ATCAGTACAA	2820
ATAAAGCTAA AACGACACCA CTAATCAGAA TCACACCTTG AATAAAGTCT GTCCATAATA	2880
CGGATTTTAG ACCACCAGTA TAAGAATAAA CAATTGCAAC TACACCCATC AAAATAATCA	2940
AAATATTGAT GTCAATTCCT GTCAATACTG ATAAACCAGC TGATGGGAGG TACATAATGA	3000
TAGACATACG TCCCAATTGA TAAATAATAA ACAAGAGTGC TGAAATAATA CGAAGTGCTT	3060
TAGAATTAAA ACGTTTATCC AAGTAATCAT ATGCCGTATC GATGTCTATC CGTGCAAAGA	3120
TAGGTAAGAT AAAACGAATT GTCAGTGGAA TAGCTACTAC CATCCCTAAT TGAGCAAACC	3180
ATAAAATCCA GCTACCTGCA TAAGAGCTAC CAGCGAGTCC CAAGAAGGAA ATCGGACTGA	3240
GCATTGTGGC AAAAATGGAT ACCGAAGTAA CATACCAAGG AACCGAACCA TCTCCTTTAA	3300
AGAACTCTTT TCCTTTCATC TCTTTTTTAG AGAAATAGAT ACCTGCAACC AACACCGCAA	3360
GTAAATAAAC AATCAAGATA ATTAAGTCAA TTATTGTAAA TCCTGTTGTG CCCATAACAT	3420
ATCTCCATAT TGATTTTATT TATTATAAAA ATTCTTTTCG TGCTTGTGA ATAAGTTCTG	3480
CTGCTTGTTT TGCAACTTCC AAGTCACCTT CTGCCAATGC TTCTAAAGGT TGACGAACAG	3540
AACCTAAATC AAGTTTTTCA TTTAGACGCA AAACCTCTTT TGCTACAGCA TACATATTTG	3600
CCTTACCTGA TATCATCTTA TAGATAACTT CATTGATAGC ATATTGAAGT TTTTAGCTG	3660
TATCTAAATC TCGTTCTGA ATCAAACCTT CCAATTTCAA GAACAAATCT GGCATAACGC	3720
CATAAGTACC ACCAATACCA GCTTCTGCTC CCATCAAGCG ACCACCAAGA TATTGTTTAT	3780
CTGGACCATT GAATACAATG TAATCTTCTC CACCTGCAGC TACAAACATT TGAATATCTT	3840
GTACAGGCAT AGAAGAATTT TTAACFCAA TCACACGAGG ATTTTGACGC ATTGTTGCAT	3900
ACAAACTACC AGTCAACGCA ACCCCTGCCA ATTGTGGAAT ATTATAGATA ATAAATCTG	3960
TATTTGACGC AGCTTCACTC ATTGCATTCC AATATGCTGC GATTGAATAC TCTGGCAATT	4020
TGAAATAAAT AGGTGGGATA GCTGCAATAG CATCGACTCC AACACTTTCT GAATGTTTGT	4080
CCAATTCGAT ACTATCTTTC GTGTTATTAC ATGCAATATG GTTGATAACT GTTAATTTAC	4140
CTTTAGCAAC TTCCATAACA GCTTCAATAA TTTGTTTACG ATCTTCTACA CTTTGGTAAA	4200
TACATTCAAC TGAAGAACCA TTTACATAGA TACCTTTTAC ACCTTTGTCA ATGAAATATT	4260
GTACCAGAGA TTTTACACGA TCTTGGCTAA TTTCAACATT TTCATCATAG CAAGCATAAA	4320
ATGCAGGGAT AACGCCCTTG TATTTAGTTA AATCTTTCAT CAGATTTCTC CTTTATATTG	4380
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CACCAATGAC TACACTGGTA ACACCTAAAC TATAAGCTTT TTTTAATTGT TCTGGATAAT	4500
GAATTTTTCT TCGGCAATTA CCGGAATATT AAAATCAGCC AATTTTTTCA TTAGTTCAAA	4560
ATCAGGCTCA TCTGATTGTA CACTTGTACT TGTGTAACCT GATAATGTTG TACCAACAAA	4620
ATCAACGCCT GATTTAAATG CATAGAGACC TTCATCTAAA TTACTTACAT CCGCCATCAG	4680
CAATTGATTC GGATATTTTT CTTTTATTTT TTTGATAAAT TCACTGACAA CTAAGCCATC	4740
ATATCTTGGT CTTAAAGTTG CATCAAATGC AATGACTGTT GTTCCGCATT CTACAAGTTC	4800
ATCTACTTCT TTCATCGTAG CAGTAATATA TGGTCTTGA GGTGGATAAT CCCTTTTGAT	4860
AATTCCAATT ATTGTAATCT TACTACTTT CTGAATTGCT TTAATATCAC GCACAGAATT	4920
TGCGCGAATG CCCACTGCTC CTGCCTCTAA AGCTGCTTTA GCCATAAAAG GCATCAAGCT	4980
AAATCTTCA TTATAAAGG CTTACCAGG TAAAGCTTGA CAAGAAACAA TGAATCCACC	5040
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TATGGATAAT AGTTTGATTG TAATAATATT GTCTCTCTGG ACTTTCAGA TAATTAGAGA	5160
ATAAGCAGTC TGTAATTAAA AGTATGGAA ACTGAGGTGA TATGCGATTG CCATACGAGA	5220
GATGATCGGT CGAAGCTAAT AACAAAGTT CATCAAAGAA ACAATCTTCT TCGTCAAATT	5280
TTCTTGTAAGT CATTAAACT GTTTTAGCGC CTTTATCTGC AGCTTTTTGT AGACCTTCTA	5340
GTACAATATC AGTTTGACCT GAAATGGATG CTCCAATGAC AAGGCAATTT TCATTAAGTA	5400
GTAAGCTACT CCACAAAATC ATATCCTCGT CTGATAATAC TTCACCAATC ACTCCGAGAC	5460
GCATAAATCT CATCTTCATT TCTTGTAAG CAAGAACAGA ACTTCCTTTA CCGTAGAGAT	5520
ATACACGCTC AGCAGTTTCT ATCATCTCAG CAATACGCTC AAGTTGAACT TCATCAAGAA	5580
CCGTGTAAGT TTTTCTCAAC ATTTCTCAT AGTCGGATAA AACTTTTTCT GTTGCCTCTG	5640
TATATAATGC CAACTTTTCT TTCTCATGAA TCATCTCTTG GTATTTGAAA ATGAATTGTC	5700
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GGTATTCGCA CAATGCTTTA GATGAATAAT CATTCAGAGG TTGCTGTTTT AAGAAGAATT	5820
TAGCAATGTC TTTTTCAGCA TATGCCATAT TTGTAAGTT AGCTTCTATC ATTGGAATTA	5880
GTCTTTTTTG CAGTAACATA TGAGCTCCTT AGTTGAAGTA AACGTTTACA TTCTTTATTT	5940
TAACACTTTT TTTTTTTTTC AATATTTTTC ATAAATTAGA AACTAGTTTC CAATTTCTTT	6000
CGTTTCATAA CAGAACAACA AACATAAAAA TATAATAGTT TTTATTCTTT TTATCGTAAT	6060
TATATGTATT GTAAGACGT TTATCACTAA TAATATGTTT ATATTAAAAT ATTTTAGTAA	6120
TATTTTATTT TGGTTTATT ATTTCTTTTC GGAATTTCTA TATAATATTT TATTTCTAAA	6180

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AAAATTGAAA AAATATTTCT AGTTTCTTTA TTTTATATAG GTAATATATT TTATTTCTAA	6240
ATTAAAAGAG AATCCCATAA AACTACAGA TTTATGAGAT AAATCAGGTC ACCTATTTTA	6300
AAAAAGCAGC AACTATAAA CTAAAAAGTT CCACACCAAA TGTAACCCCA TACTTCCCCA	6360
TAAGTCAGAT TTATAGCGCA CCATACCTAA AAACATTCCA AGTGAAACGT ACAGACACCA	6420
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AATATCTAAT TTTCTAACCA AGTTCCATAA AATTTACGTA TACAGAAATT CTTCAACCAT	6540
ACTCGCATTG ATTAAGAACA ATAAAAATGA AAACCAAGGA ACTTGATGTT GAAGGCCAAT	6600
TAAATTTGTT TGATTGCTGC TTCCTTGAGC ATGAATCAGG CTAAAAACATA GACTTATAAT	6660
CAGTAGACTA GCTAGTCCAA TACCAAGGCA TTTCATCCTA GTTTTCATAT TGACCTTGAC	6720
CACTTGTTTT CGTTGACCAT ACATCCATAA AAAAGAAAAA AGAGACGCAC CATAGAGAAC	6780
CTGTAGTATA GTTAACTCAC CGATACAAAG AAATTTCAAT AAGTATAGAG ATACCAATAG	6840
GACATTTACT TGTTGGAATA TATAAACTGG AATTATTTCTT TTCATAGTTA CCTCCGAAAT	6900
AAATCTTCAT AATCTAAATC TAATATCTGC ACAATCCTTT CTACCCATGG ACTTTGAGGC	6960
ATTCGTTGTT CCATCTTGTA GTGGCGAATC TTTTGATATA AACGATTCAA TTTCACTTGA	7020
TAGTGAAACT CTCCCGCAAA CATTTTCTCG GTTAACTCAA TCCAGCTGAT ATTTCTTTCA	7080
GCCAAAATAA TGGACAAGTT CTCCCAAAT CGTTCAGCCA TATTCTTCT CCTTTAGTTA	7140
GATAAATAAT GTGTTTGYGC CATGTAAATC AATTGTTTCG TATCTCTTGG CAATAGAGCT	7200
CTAGCCTCTT CCAATTCAG ACTTGATAA ACCCGCTTAT TTGAAACCAC AAAAGGAAGT	7260
CCGATGGTTA GTTCAGGATT TTTTAAAATT ATCTCAACGA AATCCGTTAA TCTTAGATTG	7320
TCACGGTTCT TAAATCGTAA TAAATTGGGA GATAAAAACT CAAAACAATC TGAAGAATAG	7380
CTCATCATCT CAATTAATTT GTCCTTTGTC ATTTCAGAAA CTGAATGACA AGATACCTCA	7440
ATGCCATAGT TTTGGAAGAA GTCTAAAAGA AGTTGATTTC TTTGGCTATT TTTACTTAGA	7500
TAGAGATCAA TCATGGGAGA CCTCCAACAA ATTTGCTTCC ATTTGATATT CTGAGACGAT	7560
TAAGGAATCT AACAACTTTG AGAAGTTAAT CGATTCTTG TCTTCATCAT AAGCTTTTAC	7620
AGTTACTTGG GTTGTAAGTA TCCCTCTTT TCCCTCGGCT CGATAGTCTT GTCAATATAA	7680
AACAAAAACA AGATTCTGAT TATCATCTAC AAAGGCATTA ACTCCGTTCT TTATATCCTG	7740
ACTTTCAAGG AATTCATAA CGTTTGAAG ATAGGATTCA TAAAATAGTG GGTAATTATG	7800
TTTTTTATGG TAATCATCTA AAAATGTTAC CTCAACTCA CATGGATAAT TGGGCATCAA	7860
AAATATTTGT TCATCCAGCT GTTTGATTTC TGCATCATGT AATTCTGTTT CTAATTCATC	7920
ACAATCTAGT ATTGATTCTT TATTTAATGC TTTTATCTTT TTCCTCTATT TCTTTTAATT	7980

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TCTTTGCGAT TCGGCAATC ACAGGAACGG TTACACTATT ACCAACTTGT TTATAGAGCT	8040
GACTATTAAAT AGAGACTTTT CTAGCAGCTT CAAAAGCCTA ATCAGGAAAG CCATGCAATC	8100
GAAAACACTC TTTAGGAGTG ATTCGTCGTA TTCTCAAACG GTAAAATTGT CCATCTATTA	8160
AAACACCAGC TACTTGGTAA ACTTGTTTAT CTTCTCCTTC ATAGCTAGCC ACTACTACTC	8220
CCATTTGACC ACTAGTTGTT AACGTATTAG CTATACCTTT TCCAACCTA CCACGACGAT	8280
ACTGAGAAT TGGTCTTTCT AAATTGATTG AATCCCCAAT CTCTGCTTGA GCATATCCTT	8340
TTTTCGTTGC TTCCCGTACT TTTAGAAATT GGATTGGTTC TGGAACTACT ATTTTGGGGA	8400
TTTATCTCC TCCTTGCATC GTAGTCAGTG TTGGAGATAA GCCCTCACTT CCATAGACAC	8460
GACCTGTCTC CTTAAAGCTA GTCGGTAAAT CTCCAACAAC GACAATGCCA TAACGATCCT	8520
GAGTATTTAA AGTAAACATC GGCTCTTGAT TTTCTTAAA GCGTCTCCCA TTTTGTCTCT	8580
TGTCTAATCT ATCTGGTGTC ATACAAGGAA TCGCAACTTT AAATCCTTCT CCTTTACCAC	8640
GAATAAGGT TGGCGCAAGA CCTTCTGAAT AATAGACTTT ACCGCTCATT CCACTTCTTG	8700
ATGGATTCAA ATTTCTAGT GCTTTCAAAG TCTCAGAGTT AGTTGCTTGA CCTTCTCGTC	8760
TGAAAGGAAA TAAGAGCTG GTACCTTTCT TTCTAGAATG TCCGATAATA AACACCCTCT	8820
CTCTGTTTTT GGAACGCCA AAATCCTTAC TGTTAAGCAC CTGCCACTCA ACATCAAACC	8880
CCAACTCATC AAGTGTGGTA AGTATTGTGG TGAACGTCCG TCCCTTATCG TGATTGAGTA	8940
GGCCTTTAAC ATTTTCAAGA AAAAGAAAAC GTGGTTGGAT TTGTTTGGCC GCCCGAGCAA	9000
TTTCAAAGAA CAAAGTTCCT CTAGTATCTT CAAATCCCAA TCGTCTTCTT GCGATTGAAA	9060
ATGCTTGACA AGGGAATCCC CCACAGATGA CATCGACTTT CCCTCTAAGT TTTTAAATT	9120
CGTCATCTGA AACATCTCGT ATGTCATGAA ATTCTATTTC TCCTTCCGTT TGAAAAATGG	9180
ACTTATAAGA TTTCTAGCA AATTTATCAA TCTCAGAAA TCCCAAGCAC TCATGCCCTT	9240
GAGCTTCCAT TCCCATCCTA AAGCCTCCTA TCCCAGCAA TAAATCTAAA ACCCAAATCA	9300
TTCATACCTC TCTCACTAG ATGTAACCTA CAAAACCCCT GACCTCATGA GCCACTTTCT	9360
TCCTCCTCAT GAGGTCAGTT TTAATTTCTG CTGTTCCAGT ATCGTTTTTC CTCGCTAGAT	9420
TTCTCAGAAA GGCAGACTC CTCCCTTGGT TCGTCACAG ATTTTTTCAT CTCGACTGTT	9480
CTTTAATGCA TCATTAACGA CGCTTTTCTT CTAGGTGGTT CATAAGGAAC AGGAAGATTC	9540
AGGTTGACTT TTCTAATCCT AGAATAAAGT GCTGAAAACA ATTCCGAATA GGCATAGAGA	9600
CTAGACAATT TGAGGAGCTG CTTGCGTCCT GTTCGAACAC ATTTTCTTAC CACGTGAAGA	9660
AAAAGATGGC GGAAGCGTTT GATTGTTAAA GTTTGGAAGT CACCTCCAGC TAGATGTTTG	9720

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AGAAAAAGAT AGAGATTGTA GGCATACAG CTCATCATCA TACGAACTCG TTTTGTGATTA	9780
AGGTTGAACT ATCCGTTTTA TCGCCAAAAA ATCCCTCCTT CATCTCCTTG ATGAAATTCT	9840
CGGCTTGACC ACGTCCACGA TAAAGCTGAA ACTGGTCTTG GCTTGTTCGG GTACCGA	9897

(2) INFORMATION FOR SEQ ID NO: 11:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 8148 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

CCGTGGAACA AGCCAAGACC AGTTTCAGCT TTATCGTGGA CGTGGTCAAG CCGAGAATTT	60
CATCAAGGAG ATGAAGGAGG GATTTTTTGG CGATAAACG GATAGTTCAA CCTTAATCAA	120
AAACGAAGTT CGTATGATGA TGAGCTGTAT CGCCTACAAT CTCTATCTTT TTCTCAAACA	180
TCTAGCTGGA GGTGACTTCC AAACTTTAAC AATCAAACGC TTCCGCCATC TTTTCTTCA	240
CGTGGTAGGA AAATGTGTTT GAACAGGACG CAAGCAGCTC CTCAAATTGT CTAGTCTCTA	300
TGCCTATGCC GAATTGTTTT CAGCACTTTA TTCTAGGATT AGAAAAGTCA ACCTGAATCT	360
TCCTGTTTCT TATGAACCACT AGAAGAAA AGCGTCGTTA ATGATGCATT AAAGAACAGT	420
CGAGATGAAA AAATCGGTG ACGAACCAAG GGAGGAGTCT GCCCTTTTGA GGAAATCTAG	480
CGAGGAAAAA CGATACTGGA ACAGCAGAAA GTAAACTGA CCTCATGAGG AGGAAGAAAG	540
TGGCTCATGA GGTGAGGGT TTTGTAAGTT ACATCTAGTT GAGAGAGGTA TGAATGATTT	600
GGGTAAATAC AATGAGCTTG AAAGAAGTAG CAACTCACC AAGCGCCAAT TCTTTGAGAA	660
TCAGATGCTG GATTATACCA TCATTGCGCA TGAGAGTTT GAAATCATCC GTCATTCTGT	720
CTACCAGACA GATGATCGTG AAGTGGAAAA TGCTCTGGCT TTTGAAGTGA AAAATGATGA	780
AACAGACAAG CTGATTCTGT TATTAAGCGA GGATATTGGT GTAGGTGAAA AATTGTGCCT	840
CGTTGACGGA AAAAAATGC GTGGAAAAATG TTTAGTATAT GATAAAATAA ATGAGAGAAT	900
GATTCGCTTG CAGTGCTAGA AATAGGCATT TTGAATAGTG AATATGTTAT AATAAGTATT	960
AGTAGGAGGT GTTTTAGATT GGAGAAGAAA CTGACCATAA AAGACATTGC GGAAATGGCT	1020
CAGACCTCGA AAACAACCGT GTCATTTTAC CTAAACGGGA AATATGAAAA AATGTCCCAA	1080
GAGACACGTG AAAAGATTGA AAAAGTTATT CATGAAACAA ATTACAAACC GAGCATTGTT	1140
GCGCGTAGCT TAAACTCCAA ACGAACAAAA TTAATCGGTG TTTTGATTGG TGATATTACC	1200
AACAGTTTCT CAAACCAAAT TGTTAAGGGA ATTGAGGATA TCGCCAGCCA GAATGGCTAC	1260

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CAGGTAATGA TAGGAAATAG TAATTACAGC CAAGAGAGTG AGGACCGGTA TATTGAAAGC	1320
ATGCTTCTCT TGGGAGTAGA CGGCTTTATT ATTCAGCCGA CCTCTAATTT CCGAAAATAT	1380
TCTCGTATCA TCGATGAGAA AAAGAAGAAA ATGGTCTTTT TTGATAGTCA GCTCTATGAA	1440
CACCGGACTA GCTGGGTAA AACCAATAAC TATGATGCCG TTTATGACAT GACCCAGTCC	1500
TGTATCGAAA AAGGTTATGA ACATTTTCTC TTGATTACAG CGGATACGAG TCGTTTGAGT	1560
ACTCGGATTG AGCGGGCAAG TGGTTTTGTG GATGCTTTAA CAGATGCTAA TATGCGTCAC	1620
GCCAGTCTAA CCATTGAAGA TAAGCATACG AATTTGGAAC AAATTAAGGA ATTTTACAA	1680
AAAGAAATCG ATCCCGATGA AAAAATCTG GTATTTATCC CTAAGTGTG GGCCCTACCT	1740
CTAGTCTTTA CCGTTATCAA AGAGTTGAAT TATAACTTGC CACAAGTTGG GTTGATTGGT	1800
TTTGACAATA CGGAGTGGAC TTGCTTTTCT TCTCCAAGTG TTTCGACGCT GGTCAGCCC	1860
TCCTTTGAGG AAGGACAACA GGCTACAAAG ATTTTGATTG ACCAGATTGA AGGTCGCAAT	1920
CAAGAAGAAA GGCAACAAGT CTTGGATTGT AGTGTGAATT GGAAAGAGTC GACTTTCTAA	1980
AATGAAGGAA AATGACTTGC AATCTCTGTT AAGAAATAAA ATAATCCAC CTAGAACAAG	2040
CTAGGTGGGA TTATTTGCCT ATGAAATGAG AAATATATGG AGCAAGCTCC TAAATCAACT	2100
GTTTTGTATC TACTTCTTA ACTACTTGAT AAAAGTTATA GAAGTAGGCC AAAGTTGAAA	2160
TGATGGTTAC GACTAGGAAT ATTGAAAATT TCCATTGGAC AGGGTTGGTT AAAAGTTGTG	2220
GAAAGGATAT GAGGAGAAAG AAGAGGGCTG CGTTGAGGAC AGGTATCCGT TTTGATTGTA	2280
TTTCTCAAG TCCTTTATTG AGCGCAGGAA GAAAGAGGAG TAGGAGTAGT AAAACTGTAT	2340
GAGAAATAGC TCCTGAAGTA AGGGCGAAGA AAAGGAAAT ACTGATAAAA ACATGAATGA	2400
TCAGTAGTCT AGCTAGTGAT TTCATAAGGC ACCTCCTAAT CCTGGTCTTT TTTAGCTCTT	2460
GCAATACGAA GTGAGTCGAC AATATGTATC ATCACTCCGA AAAAGAAAGC TCCCAGTATA	2520
GTTTTAAAA TATGTTTGT ATTTAGAAGA GAACTGATAA AATTTGGATT TTCATTGTT	2580
AGGGTATCAA TGAGTGAAT TATAAAAAAT ATCACTGTTC CATAAATCGA ACCTGCTTTC	2640
AGACCAGGAT AACGTAAGT TTTCTTTTCT TTTTTCATGA GTTCTCTCT AATCCTCATC	2700
TTGATTTTTC TTAGTTTTTG CAATGCGACG GGAGATGAGG AACTGTATGC TCGCTCCGAA	2760
GAAAATAGAA CCGAGAATAC TTGATACACC ATTTCTTATA GTGAGAAGAG AATGAAAATA	2820
GTCTGACCT TCATCTATGA GTATCTGAG AAGAGGAGTT ATAAAAACA TCCATAGACC	2880
AAAGAACAAA CCTGCTTTCA GACCTGGGTA GTGTAGTTGC TTGCTTTCTT TCTCATTCAG	2940
CATATCTGGT TCAATGACTG TGATGCCTGT TTTTTCATT TGGTAGGTGA CATAGCCAGA	3000

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AGCGATGAGG	GCAATCACTA	AAATCAGAGG	AGGATAGATT	AGAGCCACTT	CTTGAGGGTA 3060
TTTATAGGCC	AGAAGGAGTG	GAATAAGATT	TCCGAAAATC	ATCAGATAAA	AGAGGATGAT 3120
AAAGACTTGG	TTCCCAATAC	TATCGGCCTC	ACGCCGTTTG	TATTCGTCAA	GGGACCAGA 3180
AATACCGTAT	GTGCGTTTGA	TCAGTTTTTC	AGTGAAGGTT	TCTTTTTTCA	TGAGTTTGCT 3240
CCTTTTTTAA	AAATCTTCCT	CCCAAAAGAG	ACTGTTGAGG	TCAGTTTGGA	GGCTGCGGGC 3300
GAGATTGAGA	CAGAGTTCCA	AGGTTGGATT	GTACTTGTCG	TTTCAATCA	TATTGATAGT 3360
CTGTCTCGAG	ACACCGATAT	CCTTGGCGAG	TTCGAGCTGG	GAAATACCCA	ATTCCCTGCG 3420
AAATCTTTTC	ACACGATTCA	TCTGTTCTCC	TTTCTGATTT	ATGTCGTATA	TATTTGACTA 3480
TATTATAGTC	TTTTAAACAT	AAAGTGTCAA	GTATTTTTGA	CATATTTTTT	GAAGAAATAG 3540
TAGTCTCCTT	GTCCATTTTG	TCTGACAAGT	GCAAGCTGGT	CGGATTTGTG	GTAAAATAGA 3600
TAAGATATGA	CAAAAGAATT	TCATCATGTA	ACGGTCTTAC	TCCACGAAAC	GATTGATATG 3660
CTTGACGTAA	AGCCTGATGG	TATCTACGTT	GATGCGACTT	TGGGCGGAGC	AGGACATAGC 3720
GAGTATTTAT	TAAGTAAATT	AAGTGAAAAA	GGCCATCTCT	ATGCCTTTGA	CCAGGATCAG 3780
AATGCCATTG	ACAATGCGCA	AAAACGCTTG	GCACCTTACA	TTGAGAAGGG	AATGGTGACC 3840
TTTATCAAGG	ACAACCTCCG	TCATTTACAG	GCATGTTTGC	GCGAAGCTGG	TGTTCAGGAA 3900
ATTGATGGAA	TTTGTTATGA	CTTGGGAGTG	TCTAGTCCTC	AATTAGACCA	GCGTGAGCGT 3960
GGTTTTTCTT	ATAAAAAGGA	TGCGCCACTG	GACATGCGGA	TGAATCAGGA	TGCTAGCCTG 4020
ACAGCCTATG	AAGTGGTGAA	CAATTATGAC	TATCATGACT	TGGTTCGTAT	TTTCTTCAAG 4080
TATGGAGAGG	ACAAATCTCT	TAAACAGATT	GCGCGTAAGA	TTGAGCAAGC	GCGTGAAGTG 4140
AAGCCGATTG	AGACAACGAC	TGAGTTAGCA	GAGATTATCA	AGTTGGTCAA	ACCTGCCAAG 4200
GAAGTCAAGA	AGAAGGGGCA	TCCTGCTAAG	CAGATTTTCC	AGGCTATTCT	AATTGAAGTC 4260
AATGATGAAC	TGGGAGCGGC	AGATGAGTCC	ATCCAGCAGG	CTATGGATAT	GTTGGCTCTG 4320
GATGGTAGAA	TTTCAGTGAT	TACCTTTCAT	TCCTTAGAAG	ACCGCTTGAC	CAAGCAATTG 4380
TTCAAGGAAG	CTTCAACAGT	TGAAGTTCCA	AAAGGCTTGC	CTTTCATCCC	AGATGATCTC 4440
AAGCCCAAGA	TGGAATTGGT	GTCCCGTAAG	CCAATCTTGC	CAAGTGCGGA	AGAGTTAGAA 4500
GCCAATAACC	GCTCGCACTC	AGCCAAGTTG	CGCGTGGTCA	GAAAAATTCA	CAAGTAAGAG 4560
GGAAAAAGAT	GGCAGAAAAA	ATGGAAAAAA	CAGGTCAAAT	ACTACAGATG	CAACTTAAAC 4620
GGTTTTTCGG	TGTGGAAAAA	GCTTTTTTACT	TTTCCATTGC	TGTAACCACT	CTTATTGTAG 4680
CCATTAGTAT	TATTTTTTATG	CAGACCAAGC	TCTTGCAAGT	GCAGAATGAT	TTGACAAAAA 4740
TCAATGCGCA	GATAGAGGAA	AAGAAGACCG	AATTGGACGA	TGCCAAGCAA	GAGGTCAATG 4800

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AACTATTACG TGCAGAACGT TTGAAAGAAA TTGCCAATTC ACACGATTTC CAATTAAACA	4860
ATGAAAATAT TAGAATAGCG GAGTAAGATA TGAAGTGGAC AAAAAGAGTA ATCCGTTATG	4920
CGACCAAAAA TCGGAAATCG CCGGCTGAAA ACAGACGCAG AGTTGGAAAA AGTCTGAGTT	4980
TATTATCTGT CTTTGTTTT GCCATTTT TAGTCAATTT TGCGGTCATT ATTGGGACAG	5040
GCACTCGCTT TGGAACAGAT TTAGCGAAGG AAGCTAAGAA GGTTCATCAA ACCACCCGTA	5100
CAGTTCCTGC CAAACGTGGG ACTATTTATG ACCGAAATGG AGTCCCGATT GCTGAGGATG	5160
CAACCTCCTA TAATGTCTAT GCGGTCATTG ATGAGAACTA TAAGTCAGCA ACGGGTAAGA	5220
TTCTTTACGT AGAAAAACA CAATTTAACA AGGTTGCAGA GGTCTTTCAT AAGTATCTGG	5280
ACATGGAAGA ATCCTATGTA AGAGAGCAAC TCTCGCAACC TAATCTCAAG CAAGTTTCCT	5340
TTGGAGCAAA GGGAAATGGG ATTACCTATG CCAATATGAT GTCTATCAAA AAAGAATTGG	5400
AAGCTGCAGA GGTCAAGGGG ATTGATTTTA CAACCAGTCC CAATCGTAGT TACCCAAACG	5460
GACAAATTCG TTCTAGTTT ATCGGTCTAG CTCAGCTCCA TGAAATGAA GATGGAAGCA	5520
AGAGCTTGCT GGGAACCTCT GGAATGGAGA GTTCCTTGAA CAGTATTCTT GCAGGGACAG	5580
ACGGCATTAT TACCTATGAA AAGGATCGTC TGGGTAATAT TGTACCCGGA ACAGAACAAG	5640
TTTCCCAACG AACGATGGAC GGTAAGGATG TTTATACAAC CATTTCCAGC CCCCTCCAGT	5700
CCTTTATGGA AACCAGATG GATGCTTTTC AAGAGAAGGT AAAAGGAAAG TACATGACAG	5760
CGACTTTGGT CAGTGCTAAA ACAGGGGAAA TTCTGGCAAC AACGCAACGA CCGACCTTTG	5820
ATGCAGATAC AAAAGAAGGC ATTACAGAGG ACTTTGTTTG GCGTGATATC CTTTACCAAA	5880
GTRACTATGA GCCAGGTTCC ACTATGAAAG TGATGATGTT GGCTGCTGCT ATTGATAATA	5940
ATACCTTTCC AGGAGGAGAA GTCTTTAATA GTAGTGAGTT AAAAATTGCA GATGCCACGA	6000
TTCGAGATTG GGACGTTAAT GAAGGATTGA CTGGTGGCAG AACGATGACT TTTTCTCAAG	6060
GTTTTGCACA CTCAAGTAAC GTTGGGATGA CCTCCTTGA GCAAAAGATG GGAGATGCTA	6120
CCTGGCTTGA TTATCTTAAT CGTTTTAAAT TTGGAGTTCC GACCCGTTTC GGTGTGACGG	6180
ATGAGTATGC TGGTCAGCTT CCTGCGGATA ATATTGTCAA CATTGCGCAA AGCTCATTTG	6240
GACAAGGGAT TTCAGTGACC CAGACGCAAA TGATTCGTGC CTTTACAGCT ATTGCTAATG	6300
ACGGTGTCAT GCTGGAGCCT AAATTTATTA GTGCCATTTA TGATCCAAAT GATCAAACTG	6360
CTCGGAAATC TCAAAAAGAA ATTGTTGGAA ATCCTGTTTC TAAAGATGCA GCTAGTCTAA	6420
CTCGGACTAA CATGGTTTGT GTAGGGACGG ATCCGGTTTA TGAACCATG TATAACCACA	6480
GCACAGGCAA GCCAACTGTA ACTGTTCTCG GCAAAATGT AGCCCTCAAG TCTGGTACGG	6540

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CTCAGATTGC TGACGAGAAA AATGGTGGTT ATCTAGTCGG GTTAACCGAC TATATTTTCT	6600
CGGCTGTATC GATGAGTCCG GCTGAAAATC CTGATTTTAT CTTGTATGTG ACGGTCCAAC	6660
AACCTGAACA TTATTCAAGT ATTCAGTTGG GAGAATTTGC CAATCCTATC TTGGAGCGGG	6720
CTTCAGCTAT GAAAGACTCT CTCAATCTTC AAACAACAGC TAAGGCTTTA GAGCAAGTAA	6780
GTCAACAAAG TCCTTATCCT ATGCCTAGTG TCAAGGATAT TTCACCTGGT GATTTAGCAG	6840
AAGAATTGCG TCGCAATCTT GTACAACCCA TCCTTGTGGG AACAGGAACG AAGATTAAAA	6900
ACAGTTCTGC TGAAGAAGGG AAGAATCTTG CCCCGAACCA GCAAGTCCTT ATCTTATCTG	6960
ATAAAGCAGA GGAGGTTCCA GATATGTATG GTTGGACAAA GGAGACTGCT GAGACCCTTG	7020
CTAAGTGGCT CAATATAGAA CTTGAATTTT AAGGTTCCGG CTCTACTGTG CAGAAGCAAG	7080
ATGTTCTGTC TAACACAGCT ATCAAGGACA TTAATAAAAT TACATTAACT TTAGGAGACT	7140
AATATGTTTA TTTCCATCAG TGCTGGAATT GTGACATTTT TACTAACTTT AGTAGAAATT	7200
CCGGCCTTTA TCCAATTTTA TAGAAAGGCG CAAATTACAG GCCAGCAGAT GCATGAGGAT	7260
GTCAAACAGC ATCAGGCAAA AGCTGGGACT CCTACAATGG GAGGTTTGGT TTTCTTGATT	7320
ACTTCTGTTT TGGTTGCTTT CTTTTTCGCC CTATTTAGTA GCCAATTCAG CAATAATGTG	7380
GGAATGATTT TGTTTATCTT GGTCTTGATG GGCTTGGTCG GATTTTTAGA TGACTTTCTC	7440
AAGGTCTTTC GTAAATCAA TGAGGGGCTT AATCCTAAGC AAAAATTAGC TCTTCAGCTT	7500
CTAGGTGGAG TTATCTTCTA TCTTTTCTAT GAGCGCGGTG GCGATATCCT GTCTGTCTTT	7560
GGTTATCCAG TTCATTTGGG ATTTTCTAT ATTTTCTTCG CTCTTTTCTG GCTAGTCGGT	7620
TTTTCAAACG CAGTAACTT GACAGACGGT GTTGACGGT TAGCTAGTAT TTCCGTGTG	7680
ATTAGTTTGT CTGCCTATGG AGTTATTGCC TATGTGCAAG GTCAGATGGA TATTCTTCTA	7740
GTGATTCTTG CCATGATTGG TGGTTTGCTC GGTTCCTTCA TCTTTAACCA TAAGCCTGCC	7800
AAGGTCTTTA TGGGTGATGT GGGAAGTTG GCCCTAGGTG GGATGCTGGC AGCTATCTCT	7860
ATGGCTCTCC ACCAAGAATG GACTCTCTTG ATTATCGGAA TTGTGTATGT TTTTGAAACA	7920
ACTTCTGTTA TGATGCAAGT CAGTTATTTT AACTGACAG GTGGTAAACG TATTTTCCGT	7980
ATGACGCTG TACATCACCA TTTTGAGCTT GGGGGATTGT CTGGTAAAGG AAATCCTTGG	8040
AGCGAGTGA AGGTTGACTT CTTCTTTTGG GGAGTGGGAC TTCTAGCAAG TCTCCTGACC	8100
CTAGCAATTT TATATTTGAT GTAAGAATGG CACCCTGATG TTTCAGGG	8148

(2) INFORMATION FOR SEQ ID NO: 12:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 9909 base pairs
 (B) TYPE: nucleic acid

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(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

TACTCCACCC TTAATATCCG TTCCTGTAAA TACTTTACCG CTTTAAAGTT CATAGAATTG	60
AAC TTTTAAA TGCTTGCTT CAAGCATCTT TTCCATCCAA TTTT TAGGAG TTTGACCAGC	120
TTTAAATAAA AACCTTGCTG GGGTGATTAG TATAGATTTA TCTGCGATTT TATAAGCTTC	180
ATCAATAAAA TAGTGATATA TCGGCTCATC TCTGGCTTCT CCTGTTTCCT GATACGGAGG	240
ATTTCCTATC ACGACATCAA ATTTCAATTC ACTTTCCTCG CTAGATAGGC GCTCAAAACC	300
TATCATTCTA TTCTTTTCC AGTCTTGAT ATGGGTTTGA GATTCTTCTA CTTCTGGAC	360
TTCTAGCTCA TCCGCAAACA AACTCAATTG TTGAGATTGC TTTTGTTTAG CTGAATAAGG	420
ACTACTTTTT TTCAATCCAT CCATCTGAAA GACATTGTAA GAGATAATAG TCGCAATTTT	480
TTTCTTTTGC TCTAATGTTG GTTGATTTC AGTCTTAGCT AGATAATAGT CCTCAAAAGT	540
TGCCAAAAGA TTCTCACGCG CCAAAGGAG AGAATCTCCT TGATACTCAT AACCATACGA	600
AGCATGATAA GCATCTTTTA CAAGTTTATA AAATGTGACT TCATCTGAAA CCTCAGACT	660
AATCCGTGTC AGTTTTCTAT CAACAAAACC AACTCGCTCA GATAATGGAA TTTCTCACC	720
AGTTACGTA TCATATCTCG TTACCATATA AGGTGCTTCA CCACAAGTTA CCTCTAACCA	780
TCGTAAGTCC ACATACTCCT CAAGACTTAA CGAGCCTAAT TTCGATTCTA CATATCCATT	840
TTGCTTTGCG ACCAACCACG TTGGTGTAAC CACTTCTGCC CTTATTTTGT TCCGATCTTT	900
TTGTTTCATAT TTGGATTTTT CAGATCTGGG CTGAATCAAG TTGGCAAAGT TTCCAGTAAC	960
CTTACTTGGA TTGATGCGAT CACTTGGAGC AAATCCCTTT CCTAACAAAT CATAAGAATG	1020
CGTAnGCCAA ACAATTGATT TCTTTGTCGT TCGATCTTTT AAAAGAATTT TTAATAAGTC	1080
AGCCGATTCT TTAGCCAAAC TTTCTTCACT AATATCTATT GTCATCAGCA ACCTCTCTTA	1140
TATTGTAAGC CCTATTATAT CATATTTTAA AGAATGAAAA TTTACTTGAA AAAAGTAATT	1200
CAATAAATAT CTCTCCGATG ACCAACTTCT AGAGTAGCAA CGACTAATTC ATCATCTACA	1260
ATTGTGACGA TAACTCGATA ATTACCAATT CTATAGCGCC ATTGACCAAC GCGATTACCA	1320
ACCAAAGCCT TTCCGTGTCG TCTTGGGTCT TCCAAAACAT TGGTTTGTA ATAGTTTGTA	1380
ATTAGCTTCT GCGTATAACG GTCCAATTTT TTCAATTGCT TGATAAAACG TCTTGTGGA	1440
ACTAATTTAT ACAAATTATT CATCCTTCAA GCCTAAATCA TGCATCATTT CTCCCAAGT	1500
AATGGGTTC ACTCCTTTTT CCAAGTCTTC TAAATACTCT TGATAGGCTA AATCTGCCAC	1560

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ACGAGCATCG TATTCATCTT CTAGGGCTTC AAGAGTTTGT GTGCGAATAA GTTCCGAAAG	1620
GGAAACTCCT TCAAACCTAG CCATTGCTTT CATAAATGTT TTATCAGCTT CAGAACTTT	1680
TAATGTAATA GTAGTCATCT TTTGTGCTCC CTTTTTTAAT GGTAACACCA TTGTATTACT	1740
TTTTAGGTGT TCAGTCAATA TAAAAAGAAC ACCTTCTCAG CGTTCTTTCT ATATCTCTGT	1800
CAATGGTGTT GCGGTATCTG GTGAGGTATC ATAAACCTTA AAGTCTACTC CGACTCCCAG	1860
ATCAGCTTGA GCCAGCTGAT TGACCATGGT CATATGAGCC AGTTCCTTGA TATTGTTTTC	1920
CTTAGATAAA TGCCCAAGGT AAATCTTCTT AGTACGATTT CCTAGCGTCC GAATCATAGC	1980
TTCAGCACCG TCCTCGTTAG AAAGGTGACC AAGGTCAGAT AGGATTCGTT GTTTGAGTCG	2040
CCAAGCGTAA GAACCTGATC GCAAAATCTC TACATCATGG TTGGCCTCGA TAAGATAACC	2100
ATCCGCATTT TCGACAATGC CCGCCATACG GTCACTGACA TAACCTGTAT CTGTCAAGAG	2160
GACAAAACCT TTATCATCCT TCATAAAGCG ATAGAACTGC GGTGCGACTG CATCATGGCT	2220
TACACCAAAA CTCTCGATGT CGATATCTCC AAAGGTTTTG GTTTTACCCA TTTCAAAAAT	2280
ATGCTTTTGC GAAGAATCCA CCTTGCCAAG ATATTTACTA TTTTCCATAG CTTGCCAGGT	2340
CTTTTCATTG GCATAAAGAT CCATACCATA CTTGCGAGCC AAAACGCCTA CTCCATGGAT	2400
ATGATCTGAA TGCTCATGGG TAATCAAGAT GGCATCCAGG TCTTCTGGCT TACGGTTAAT	2460
TTCAGCTAGC AGACTGGTAA TTTTCTTGCC AGACAAGCCT GCATCTACTA AAAGCTTCTT	2520
TTTTGAGGTT TCCAGATAAA AAGAATTTCC ACTGGAACCC GACGCTAAAA TACTGTATTT	2580
AAAGCCTATT TCACTCATTC TAGTCTTCTA CTTTCATCTC CCATACTTCT TCTTTCACTG	2640
CATCCTTATC ATAAGGGAGT ACAATGGTAA AGGTTGAACC CTTGCCGTAT TCACTCTTGG	2700
CCCAAATAAA GCCCTTATGT TGTTTGATAA TTTCTTTAGC GATAGACAGT CCTAGACCTG	2760
TACCACCTTG TGCACGACTT CTAGCACGAT CCACACGATA GAAACGGTCA AAGATACGTG	2820
GTAAATCCTG CTTAGGAATC CCCAAACCGT GGTCAGAAAT GGATAAAATC ATCTGGTCTT	2880
CAGTTGTCTT CATTCTGACA GTGATTTTAC CCCCATCTGG CGAATACTTA ATAGCATTAT	2940
TTAAAATATT GTCGACAACC TGCATCATCT TATCTGTATC AATTTCCATC CAGATAGAAT	3000
TGATGGGATA ATCTCTCACC AACTCATATT TTTTCTCCTT TTCCTGTCCT TTCATCTTGT	3060
CAAAACGATT GAGGATAAAG GTAATAAAG CAGTGAAGTT AATCAGTTCC ACATCTAGGT	3120
GACTGGTAGC ATTATCAATA CGTGAAAGAT GGAGGAGATC CGTCACCATG CGCATCATAC	3180
GGTTGGTCTC ATCAAGAGAA ACCTTGATAA AGTCTGGTGC TACAGTTTCA CACAAAGCCC	3240
CCTCATCCAA GGCTTCAAGA TAGGATTTTA CGCTAGTCAG AGGAGTCCGT AACTCATGGC	3300
TAACATTGGA AACAAAGAGT CTTCGTTCGC GTTCTTCCTT CTCCTGCTCC GTCGTATCAT	3360

GCAAAACAGC CACCAAACCT GAAATAAAGC CAGACTCTCG ACGTATCAAG GCAAAGCGAA	3420
CTCGAAGGTT CAAATATTCG CCATTGATAT CTTGGGAATC TAGCAACAAT TCTGGACTTT	3480
GGGTAATCAA ATCACGCAAT TCATAGTTTT CTTCTATCTT GAGCAATTCC AAAATGCTTC	3540
TATTCAGAAC ATCTTCCTTA ACCAACCCCA GTTGCTTCTT GGCTGTATCG TTAATCATGA	3600
TAATCTGACC CCGACGGTTA GTCGCAAGAA CCCCATCTGT CATATAAAAC AGAATACTAT	3660
TTAGCCTCTT ACTCTCTTGT TCTAGATTTT CCTGAGTGAG ACGAATAACC TCCGACAAGT	3720
CATTCAAATT ATTGGTAATA TTGGTGATTT CAGACCCACC TTGCATATCA AGAACCTTGG	3780
AATAATCTCC TGCAATCAAA TCTTTAACCT TTTGATTGAC TTGCTTCAAC TGAATATTAT	3840
CACGTCTATT TTCCAGTAAT AAGAGGGTCA CAACAAGGAT GAAACCTAAC AAAATCAGGA	3900
TAAAGATAAA ATCTCTGGTA AAAATGGTTT GTTTCAGTAA ATCAAGCATT ATTTCTCATG	3960
TAATACCCTA CACCACGGCG CGTCAAGATA TACTCTGGTC GGCTGGGCGT ATCTTCAATC	4020
TTCTCACGCA GACGTCGTAC AGTCACATCA ACTGTACGGA CATCACCAAA ATAGTCATAA	4080
CCCCAGACAG TCTCAAGCAA GTGTCGCGC GTGATGACTT GACCTGTATG CGATGCTAAA	4140
TGATACAAAA GCTCAAATTC ACGATGGGTT AAGCTAGTT CTTGCCATA TTTTTAGCC	4200
ACGTAGGCGT CTGGAACAAT TTCTAAATCC CCAATTTGGA TAGGTTGAGG TTTACTATCT	4260
GCTTCCTGAC CATCTACTGG CATAGGTTGA GAACGACGCA GAAGAGCTTT AACACGCGCC	4320
TGCAACTCAC GATTGGAGAA GGGTTTTGTT ACATAGTCAT CTGCCCCAAG TTCCAAACCG	4380
ATAACCTTAT CAAATTCACT ATCTTTGGCT GAAAGCATAA GAATGGGCAC ACTGCTTGTC	4440
TTACGAATGG TCTTAGCAAC TTCTAAACCA TCAATTTCTG GAAGCATCAA ATCCAGAATA	4500
ATAATATCTG GTTGCTCTGC TTCAAATTGC TCTAGCGCTT CACGACCATT AAAAGCAGTT	4560
ACAACTTCGT AACCTTCCTT GGTCAATTA AACTTGATAA TATCCGAGAT TGGTTTCTCA	4620
TCATCTACAA TTAGTATTTT TTTCATATGT TCACCTTTTT CTCTACTATT ATACCAAAAA	4680
AATAGTCAGA AGACACAATA GCTAGTCTTG GCTACTGTCT AAGTTGGCTT GTGCATAAAC	4740
CTGCCAGATT TTTTGTGGG GTTTGGCAAG TGGGTAATTC TTGAATTCTT CTGGTGAAAG	4800
CCAGCGAACT TCCCTATCTG AAAAATCATG GAAGTCACTC ACCTGACCTG CTACAATCTG	4860
TACATGCCAT TTTGATGAC TAAAAACATG CTGGACTGTA TCAAAACAAA CATCAAGCCA	4920
ATCAACATCT AGGTCATAGT CCTGCTGGAA ACTCTCTTCT GGACTGGGAC CAAAGTTCAC	4980
ACTTTCCTCC GCAACCTGAT GAAAGAGGTC AACTGCTCT TCTTGCGAAA AGTTATCAAC	5040
TTCTATAAAG GGGAAATGCC AAAAACCTGC CAAGAGCTTT TCGCTTTCAT TTTTTTCAAG	5100

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TAAAAATTGT CCTTGAGAAT TTTTCACAAC TAAGGCTTTA AGATAAATAG GAACCGGCTT	5160
TTTCTTAGGA GATTTAATTG GATAACGGTC CATGGTTCCA TTCTGATATG CCGCACTAAA	5220
GTCTTGACT GGGCTTTCTT CAGGTCTGGG ATTTACAGGA GACTCAATAT CAGACCCTAA	5280
GTCCATCAAG GCTTGATTAA AATCACCCGG ACGATCCGGA TTAATCAAGA TCTCCATCAT	5340
TGCCTGAAAA ATTTTTCGAT TACTTGGAAT CCCAATATCG TGTTGACTT CAAACAGACG	5400
CGCCAAGACC CGCATGACAT TACCATCTAC AGCTGGCTCA GGCAAGTTAA AAGCAATACT	5460
GGAAATGGCT CCTGCTGTGT AAGGTCCAAT CCCTTTCAAG CTGGAAATTC CTTCATAGGT	5520
ATTTGGAAAT TGGCCACCAA AGTCAGTCAT AATCTGCTGG GCTGCAGCCT GCATATTGCG	5580
AACTCGAGAA TAATAGCCCA AGCCCTCCCA AGCTTTCAGT AAACCTCTCCT CAGGCGCAGT	5640
TGCCAGACTT TCGACAGTTG GAAACCAGTC CAAAAATCTT TCGTAGTAAG GGATAACTGT	5700
ATCCACCCTG GTCTGCTGAA GCATGATTTC AGATACCCAG ATGTGATAAG GATTTTACT	5760
TCTCCTCCAA GGCAATCTC TTTTGTTTTC ATCATACCAA GCGAGAAGTT TCTCACGGAA	5820
AGAAATGACT TTCTCCTCCG GCCACATGAC GATACCGTAT TCTTTCAAAT CTAACATATC	5880
TCTAGTATAA CACAGAAGGT TTCACCTGTC TTTGTATCTG ATTTATAATA TTTTCAATAG	5940
ATAGTATATA ACTTTTCTAT CTACTTATAC TCAATGAAAA TCAAAGAGCA AACTAGGAAG	6000
CTAGCCGCAG GTTGCTCAAA ACACTGTTTT GAGGTTGTGG ATAGAACTGA CAGAGTCAGT	6060
ATCATATACt ACGGCAAGGT GAAGCTGACG TAGTTTGAAG AGATTTTCGA AGAGTATAAA	6120
TCTTATTGAT GAACTGCTTG CAGTCTGAGA AAAAATGAGC TTGGATATTA TTTCCAAACT	6180
CACTTAAAGT CAATTTCAT CCACTAGAAC AAGCCTAGTA CAGTTCCATC GCTTTCAACA	6240
TCCATGTTGA GAGCTGCTGG ACGTTTTGGA AGACCTGGCA TGGTCATAAC ATCACCAGTT	6300
AAGGCAACGA TGAAGCCTGC ACCTAATTTT GGTACCAATT CACGAATGGT AATTTCAAAG	6360
TTTTCTGGTG CTCCAAGCGC ATTTGGATTG TCTGAGAAAC TGTATTGAGT TTTAGCCATA	6420
CAGATTGGCA ATTTGTCCCA ACCGTTTTGA ACGATTGAG CAATTTGTGT TTGAGCTTTC	6480
TTCTCAAAGT TCACTTTGCT ACCACGATAG ATTTCACTGA CAATTTTTTC AATCTTTTCT	6540
TGGACAGAAA GGTCAATTATC ATACAAACGT TTATAGTTAG CTGGATTTTC AGCAATTGTC	6600
TTAACAACGT TTTGGGCAAG TGCTACTCCA CCTTCTGCTC CATCAGCCCA GACACTAGCC	6660
AATTCAACTG GTACATCGAT TGAGGCACAG AGTTCTTTTA AGGCTGCAAT TTCAGCTTCT	6720
GTATCAGATA CAAATTCGTT AATAGCTACA ACTGCTGGAA TACCGAACTT ACGGATATTT	6780
TCAACGTGGC GTTTCAAGTT AGCAAAACCT GCACGAACTG CCTCTACATT TTCTTCAGTC	6840
AGAGCGTCTT TAGCCACACC ACCATTTCATC TTAAGGGCAC GAAGGGTTGC GACAATAACA	6900

ACTGCATCTG GAGATGTTGG CAAGTTTGGT GTCTTGATAT CAAGGAATTT CTCAGCACCA	6960
AGGTCCGCAC CAAAACCAGC TTCAGTAACA GTGTAATCAG CCAAGTGAAG GGCTGTTGTC	7020
GTCGCCAAAA CAGAGTTACA GCCATGAGCG ATATTGGCAA ATGGACCACC GTGTACAAAG	7080
GCAGGTGTAC CGTAAATTGT CTGAACCAAG TTTGGCTTAA TAGCATCCTT CAAAATCAAA	7140
GCCAAGGCAC CCTCAACCTG CAAATCACCT ACAGAAACAG GCGTACGGTC ATAGCGATAA	7200
CCAATAACGA TATTCGCCAA ACGACGTTT AAGTCTCGA TGTCCGTGTC CAAGCAAAGA	7260
ATTGCCATGA TTTCTGAAGC AACTGTAATA TCAAAACCAT CCTCACGTGG AATACCGTTT	7320
AGAGGACCAC CAAGACCAAC AGTCACATGG CGGAGCGTAC GGTCGTTCAA GTCCACAACG	7380
CGTTTCCAGA GGATACGACG TTGATCAATT CCCAGCTCAT TCCCTTGGTG CAAGTGGTTG	7440
TCAATCAAGG CAGAAAGGGC ATTGTTGGCA GTTGTAAATAG CATGCATATC TCCAGTAAAG	7500
TGGAGGTTGA TGTCTTCCAT TGGCAGAACT TGTGCATACC CACCACCAGC AGCACCACCC	7560
TTGATCCCCA TGA CTGGACC AAGAGACGGT TCGCGGATAG CAATCATGGT TTTCTTGCCA	7620
ATCTTGTTCA AGGCATCCGC AAGACCAATG GTAAGCGTCG ACTTTCCTTC ACCTGCAGGT	7680
GTTGGGTTGA TGGCAGTAAC CAAGATCAAT TTACCGACTG GATTGCTCTC AACTGCACGA	7740
ATTTTATCAA AGCTGAGTTT AGCCTTGATC TTTCCGTACA ACTCCAAATC GTCATAAGAA	7800
ATACCAAGTT TCTCTACAAC ATCAACAATT GGCTTCAACT CAATACTCTG TGCGATTTCA	7860
ATATCTGTTT TCATTCAAAA TTCCTCTAAC CTCTTATATG ATAATTCATT ATATCAGAAA	7920
ACAAGATTTT TAACATCCTA AAACCTCTTA AACGTTGCTA AATATCTCTG TTTTAAAGAC	7980
TTTTAGAGTC CTTTCTTAAA TTTTATATGG CTTTATAGTT TGAAACTATA ATAAATCTTC	8040
GTTTTACCA AAAATTTATC ACTTTCATTT TACTTACCGC TTATTTTGTG GTACAATAGT	8100
GCTATGAAAA TTTAGTTAC ATCGGGCGGT ACCAGTGAAG CTATCGATAG CGTCCGCTCT	8160
ATCACTAACC ATTCTACAGG TCACTTGGGG AAAATTATCA CAGAGACTTT GCTTCTGCA	8220
GGGTATGAAG TTTGTTTAAAT TACGACAAAA CGAGCTCTGA AGCCAGAGCC TCATCCTAAC	8280
CTAAGTATTC GAGAAATTAC CAATACCAAG GACCTTCTAA TAGAAATGCA AGAACGTGTT	8340
CAGGATTATC AGGTCTTGAT CCACTCAATG GCTGTTTCTG ACTACACTCC TGTTTATATG	8400
ACAGGGCTTG AGGAAGTTCA GGCTAGCTCC AATCTAAAAG AATTTTAAAG CAAGCAAAT	8460
CATCAGGCCA AGATTCTTTC AACTGATGAG GTTCAGGTTT TGTTCCCTTAA AAAGACACCC	8520
AAAATCATAT CCCTAGTCAA GGAATGGAAT CCTACTATTC ATCTGATTGG TTTCAAACCTG	8580
CTGGTTGATG TTACCGAAGA TCATCTGGTT GACATTGCAC GAAAAAGTCT TATCAAGAAT	8640

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CAAGCAGATT TAATCATCGC GAATGACCTG ACTCAAATTT CAGCAGATCA GCACCGAGCT	8700
ATATTTGTTG AGAAAAATCA GCTTCAAACA GTCCAGACTA AAGAAGAAAT TGCAGAACTC	8760
CTCCTTGAAA AAATTCAAGC CTATCATTCT TAGAAAGGAA AACTATGGCA AACATTCTCT	8820
TGGCTGTAAC GGGTTCAATC GCCTCTTATA AGTCGGCAGA TTTAGTCAGT TCTCTAAAAA	8880
AACAAGGCCA TCAAGTCACT GTCTTAATGA CTCAGGCTGC TACAGAGTTT ATCCAACCTT	8940
TGACACTACA GGTACTCTCA CAGAATCCTG TCCACTTGGA TGTCATGAAG GAACCCTATC	9000
CTGATCAGGT CAATCATATC GAACTTGGA AAAAAAGCAGA TTTATTTATC GTGGTACCTG	9060
CAACTGCTAA CACTATTGCA AAAGTAGCTC ACGGATTTGC GGACAACATG GTAACCAGTA	9120
CAGCTCTAGC CCTACCAAGT CATATTCCTA AACTAATAGC TCCTGCTATG AATACAAAAA	9180
TGTATGACCA TCCAGTAACT CAGAATAATC TGAAAACATT AGAAACTACG GCTATCAGCT	9240
GATTGCTCCT AAGGAATCCC TACTAGCTTG TGGAGACCAC GGACGAGGAG CTTTAGCTGA	9300
CCTCACAATT ATTTTAGAAA GAATAAAGGA AACTATCGAT GAAAAACGC TCTAATATTG	9360
CACCCATTGC TATCTTTTTT GCTACCATGC TCGTGATACA CTTTCTGAGC TCACTTATCT	9420
TTAACCTTTT TCCATTTCCT ATCAAACCGA CCATTGTTCA TATTCCTGTC ATTATTGCCA	9480
GCATTATTTA TGGTCCACGA GTTGGGGTTA CACTTGGATT TTTGATGGGA TTACTTAGCT	9540
TGACGGTTAA CACGATTACG ATTCTACCGA CAAGCTACCT CTTCTCTCCC TTCGTACCAA	9600
ACGGAAACAT CTAATCAGCT ATCATTGCCA TCGTCCCACG TATTTTGATT GGTTTAACTC	9660
CTTACTTAGT CTATAAACTG ATGAAAAACA AGACTGGTCT GATTTTAGCT GGAGCCCTTG	9720
GTTCCcTTGAC AAATACTATC TTTGTCCTTG GAGGAATCTT CTTCTTATTT GGAAATGTTT	9780
ATAATGGAAT TATCCAACCT CTTCTGGCAA CCGTTATCTC AACAAATTCA ATTGCTGAAT	9840
TGGTCATTTC TGCAATTCTA ACCCTAGCCA TTGTTCCACG ACTACAAACC TTGAAAAAAT	9900
AAAAACAGG	9909

(2) INFORMATION FOR SEQ ID NO: 13:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1126 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:

TAATTTTCAT ATAATAGTAA AATAGAATGT GTGATTCAAT AATCACCTCA AATAGAAAGG	60
AAATTCTATG TCAAATCTAT CTGTTAATGC AATTCGTTTT CTAGGTATTG ACGCCATTAA	120

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TAAAGCCAAC TCAGGTCATC CAGGTGTGGT TATGGGAGCG GCTCCGATGG CTTACAGCCT	180
CTTTACAAAA CAACTTCATA TCAATCCAGC TCAACCAAAC TGGATTAAAC GCGACCGCTT	240
TATTCTTTCA GCAGGTCATG GTTCAATGCT CCTTTATGCT CTTCTTCACC TTTCTGGTTT	300
TGAAGATGTC AGCATGGATG AGATTAAGAG TTTCCGTCOA TGGGGTTCAA AAACACCAGG	360
TCACCCAGAA TTTGGTCATA CGGCAGGGAT TGATGCTACG ACAGGTCCTC TAGGGCAAGG	420
GATTTCAACT GCTACTGGTT TTGCCCAAGC AGAACGTTTC TTGGCAGCCA AATATAACCG	480
TGAAGGTTAC AATATCTTTG ACCACTATAC TTACGTTATC TGTGGAGACG GAGACTTGAT	540
GGAAGGTGTC TCAAGCGAGG CAGCTTCATA CGCAGGCTTG CAAAACTTG ATAAGTTGGT	600
TGTTCTTTAT GATTCAAATG ATATCAACTT GGATGGTGAG ACAAAGGATT CCTTTACAGA	660
AAGTGTTCGT GACCGTTACA ATGCCTACGG TTGGCATACT GCCTTGTTG AAAATGGAAC	720
AGACTTGGA GCCATCCATG CTGCTATCGA AACAGCAAAA GCTTCAGGCA AGCCATCTTT	780
GATTGAAGTG AAGACGGTTA TTGGATACGG TTCTCCAAAC AAACAAGGAA CTAATGCTGT	840
ACACGGCGCC CCTCTTGAG CAGATGAAAC TGCATCAACT CGTCAAGCCC TCGGTTGGGA	900
CTACGAACCA TTTGAAATC CAGAACAAGT ATATGCTGAT TTCAAAGAAC ATGTTGCAGA	960
CCGTGGCGCA TCAGCTTATC AAGCTTGGAC TAAATTAGTT GCAGATTATA AAGAAGCTCA	1020
TCCAGAACTG GCTGCAGAAG TAGAAGCCAT CATCGACGGA CGTGATCCAG TCGAAGTGAC	1080
TCCAGCAGAC TTCCCAGCTT TAGAAAATGG TTTTtCTCAA GCAACT	1126

(2) INFORMATION FOR SEQ ID NO: 14:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2520 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:

CCGGCAACAA AAAAGAAAA ATCAACAGTT AAAAAAATC TAGTCATCGT GGAGTCGCCT	60
GCTAAGCCAA GACGATTGAA AAATATCTAG GCAGAACTA CAAGGTTTGA GCCAGTGTG	120
GGCATATCCG TGATTGAAG AAATCCAGTA TGTCGTCGA TATTGAAAAT AATTATGAAC	180
CGCAATATAT TAATATCCGA GGAAAAGGCC CTCTTATCAA TGAATTGAAA AAAGAAGCTA	240
AAAAAGCTAA TAAAGTTTT CTGCGAGTG ACCCGGACCG TGAAGGAGAA GCGATTTCTT	300
GGCATTGCGC CCATATTCTC AACTGGATG AAAATGATGC CAACCGTGTG GTCTTCAATG	360

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AAATCACCAA GGATGCAGTC AAAAATGCTT TTAAAGAACC TCGTAAGATC GATATGGACT	420
TGGTCGATGC CCAACAAGCT CGTCGGATCT TGGATCGCTT GGTAGGGTAT TCGATTTCGC	480
CTATTTTGTG GAAGAAGGTC AAGAAGGGCT TGTACGAGG TCGCGTTCAG TCCATTGCCC	540
TTAAACTCAT CATTGACCGT GAAAATGAAA TCAATGCCTT CCAGCCAGAA GAATACTGGA	600
CAGTTGATGC TGTCTTTAAA AAGGGAACCA AACAAATTTCA TGCTTCCTTC TATGGAGTAG	660
ATGGTAAAAA GATGAACTG ACCAGCAATA ACGAAGTCAA GGAAGTCTTG TCTCGTCTGA	720
CGAGTAAAGA CTTTTCAGTA GATCAGGTGG ATAAGAAAGA GCGCAAGCGC AATGCTCCTT	780
TACCCATATAC CACTTCATCT ATGCAGATGG ATGCTGCCAA TAAAATCAAT TTCCGTACTC	840
GAAAAACCAT GATGGTTGCC CAACAGCTCT ATGAAGGAAT TAATATCGGT TCTGGTGTTC	900
AAGGTTTGAT TACCTATATG CGTACCGATT CGACTCGTAT CAGTCTGTGA GCGCAAAATG	960
AGGCGGCAAG CTTCATTACG GATCGTTTGG GTAGCAAATA TTCTAAGCAC GGTAGCAAGG	1020
TCAAAAACGC ATCAGGTGCT CAGGATGCCC ATGAGGCTAT TCGTCCGTCA AGTGTCTTTA	1080
ATACACCAGA AAGCATCGCT AAGTATCTGG ACAAGGATCA GCTTAAGCTA TATACCCTTA	1140
TCTGGAATCG TTTTGTGGCT AGCCAGATGA CAGCGGCCGT TTTTGATACC ATGGCTGTTA	1200
AATTGTCTCA AAAAGGGGTT CAATTTGCTG CCAATGGTAG TCAGGTTAAG TTTGATGGTT	1260
ATCTTGCCAT TTATAATGAT TCTGACAAGA ATAAGATGTT ACCGGACATG GTTGTGGAG	1320
ATGTGGTCAA ACAGGTCAAT AGCAAACCAG AGCAACATTT CACCCAACCG CCTGCCCGTT	1380
ATTCTGAAGC AACACTGATT AAAACCTTAG AGGAAAATGG GGTGGACGT CCATCAACCT	1440
ACGCGCCAAC CATTGAAACC ATTCAGAAAC GTTATTATGT TCGCCTGGCA GCCAAACGTT	1500
TTGAACCGAC AGAGTTGGGA GAAATGTCA ATAAGCTCAT CGTTGAATAT TTCCCAGATA	1560
TCGTAAACGT GACCTTCACA GCTGAAATGG AAGGTAACT GGATGATGTC GAAGTTGGAA	1620
AAGAGCAGTG GCGACGGGTC ATTGATGCCT TTTACAAACC ATTCTCTAAA GAAGTTGCCA	1680
AGGCTGAAGA AGAAATGGAA AAAATCCAGA TTAAGGATGA ACCAGCTGGA TTGACTGTG	1740
AAGTGTGTGG CAGTCCAATG GTCATTAAAC TTGTCGTTT TGGTAAATTC TACGCTTGTA	1800
GCAATTTCCC AGATTGCCGT CATACCCAAG CAATCGTGAA AGAGATTGGT GTTGAGTGTC	1860
CAAGCTGTCA TCAGGGACAA ATTATTGAGC GAAAAACCAA GCGTAATCGC CTATTCTATG	1920
GTTCGAATCG CTATCCAGAA TGTGAATTTA CCTCTGGGA CAAGCCTGTT GGTCTGACT	1980
GTCCAAAATG TGGCAACTTC CTCATGGAGA AAAAAGTCCG TGGTGGTGGC AAGCAGGTTG	2040
TTGTAGCAA AGGCGACTAC GAGGAAGAAA AGATGGCTCT TTGTCAACTG TAGTGGGTTG	2100
AAGTCAGCTA AGCTCGAGAA AGGACAAATT TTGTCCTTTC TTTTGTGATA TTCAGAGCGA	2160

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TAAAAATCCG TTTTTGAAG TTTTCAAAGT TCCGAAAACC AAAGGCATTG CGCTTGATAA	2220
GTTTGATGAG ATTATTGGTC GCTTCCAATT TGGCGTTAGA ATAGTGTAGT TGAAGGGCGT	2280
TGACGATTTT CTCTTTGTCC TTTAGAAAGG TTTTAAAGAC AGTCTGAAAA AGAGGATGAA	2340
CCTGCTTTAG ATTGTCCTCA ATGAGTCCGA AAAATTTCTC CGGTTCTTA TTCTGAAAGT	2400
GAAACAGCAA GAGTTGATAG AGCTGATAGT GATGTTTCAA GTCTTGTGAA TAGCTCAAAA	2460
GCTTGTTTAA AATCTCTTA TTGGTTAAAT GCATACGAAA AGTAGGGCGA TAAAAATGTT	2520

(2) INFORMATION FOR SEQ ID NO: 15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10993 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

TTTCTCGAT AATAACTTCC ACCTTATTAT TTGGGATACC CTCCTCTTCT TCACCACCAC	60
GTTCATAGTA GTCATCGCGA TAGAGAAAAG CTACGATATC AGCGTCCTGC TCAATAGACC	120
CAGATTACAG AATATCAGAC AAGACCGGTC TCTTGTCCTG ACGTTGTTCT ACACCACGAG	180
AAAGCTGACT CAGAGCGATT ACTGGAACCT TCAATTCCTT GGCTAGTATT TTCAACTGAC	240
GAGAAATTTC AGAAACTTCT TGTGACGAT TTTCTCGACC AGTTCCCGTG ATAAGTTGCA	300
AATAGTCTAT CAAAATCAA CCAAGATTTC CAGTTTCTTG AGCCAATTA CGAGAACGAG	360
AACGAATCTC TGTAATCCGA ATACCTGGCG TATCATCGAT ATAGATACTG GCGTTAGcTA	420
GATTACCCTG AGCAATAGTA TATTTTGGCC ACTCCTCATC TGTCAATTGC CCTGTACGGA	480
TAGAATGTGA CTCCACTAAG CCTTCTGCAG CTAACATACG ATCTACCAAG CTTTCCGCAC	540
CCATTTTCGAG TGAAAAAATA GCAACCGTTT TGTCCAACCT AGTCCCAATG TTCTGAGCGA	600
TATTCAAGGC AAATGCTGTC TTACCAACTG CTGGACGAGC TGCTAAGATA ATCAACTCCT	660
CCTCATGAAG TCCTGTTGTC ATATGATCCA AATCAGGATA ACCTGTCGCA ATACCTGTAA	720
TATCGGTCGT TTGTTGCGAG CGAGCTTCCA GATTTCCAAA GTTGAGATTG AACACATCTC	780
GAATGTTCTT AAACCCGCTT CGATTTGCAT TTCACTGAC ATCAATCAAC CCTTTTCTG	840
CCTGAGCAAT AATTTCATCA GCTGGTTGTG ACGCTTCGTA AGCTTGGTTG ACAGACTCTG	900
TCAACTTGGC AATTAAACGA CGTAGCATTG CTTTTTCTGC AACAATCTTA GCATAATACT	960
CCGCATTAGC AGAAGTTGGC ACAGAATTAA CAATCTCAAC CAAGTAAGAC AAGCCACCAA	1020

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TATTCTGTAA ATCACCTTGA TTATCAAGGA TAGTACGAAC CGTTGTTGCA TCTATGGCAT	1080
CACCACGATC GGATAAATCG ACCATGGCTT GGAAAATCAA ACGATGGGCA TACTTAAAAA	1140
AGTCCCGAGA CTCAATGTAT TCTCGCACA AAACAAGTTT ACTCTCATCA ATAAAGATAG	1200
CCCCATAAAC GGATTGCTCA GCTAAGATAT CTTGAGGTTG TACTCGTAAC TCTTCTACTT	1260
CTGCCATCAG ACTTCCCTTC CTTTACAAT CTTGTCAAGA AGGTGTAAC TTATCCTTCT	1320
TTCACACGAA GATTGATTAC ACTTGTGATA TCTTGATAGA TTTTCACTGG CACATCAATC	1380
AAACCAACCG CTCGAATCGG AGCTGTACT TGAATATGAC GTTTATCAAT CTTAATTCCA	1440
AATTGCTTTT GCAATTCTTC TGCAATCTTC TTATTGGTAA TAGAACCAA GGTACGACCA	1500
TCTGGACCAA CTTTTCAAC AAATTCTACA ACAGTTTCTT CTGCTTCAAG TTGTGCTTTA	1560
ATTGCTTTTC CTTCTGCAAT CATCTCAGCG TGAGCTTTT CTTCCGATTT TTGTTTACCA	1620
CGAAGTTCAC CTACAGCTTG AGCAGTCGCT TCTTTGGCTA GATTCTTTT GATAAGAAAG	1680
TTTTGCGCAT ACCCTGTTGG TACTTCCTTA ATTTCGCCTT TTTTACCTTT TCCTTTAACA	1740
TCTGTAAAA AGATTACTTT CATTCTTCTT TCTCCTTTTC CTTCAATTCA TTTAATACAA	1800
TTTCTGTCAG TTTTTCACCT GCTTCTGACA AGGTTACATC TTTAATTGA GCTGCTGCCA	1860
AATTAAAGTG GCCTCCACCG CCTAACTCTT CCATAATCCG TTGTACATTC AGTTTACTAC	1920
GACTTCGAGC TGAGATAGAG ATAAATCCTT GTGTATTCTT CGCAAGAACA AAACGCTT	1980
CAATACCTGA CATGGCTAAC ATGGCATCTG CTGCCTTACT AATAACAAC GTATCATAGC	2040
ATTTATGTC CTTAGCCTCT GCTATTAGTA CATCTGAACC TAATTTACGC CCCTGTAAAA	2100
TAAGTTCATT GACCTCACGA TATTCTTCAA AATCTGTCGC AGCGATTTCC TGGATAGCAA	2160
TACTATCACT TCCGCGCGTT CTGAGATAGC TAGCAACATC AAATGTCCGA CTAGTTACTC	2220
GCGAGGTGAA ATTTTTAGTA TCCAACATCA TACCAGCCAT CAAGACACTT GCTTGCATAC	2280
GACTCAAACG ATTTTCTTA GAATTCTGGA ACTGAATCAA TTCCGTTACC AACTCACTGG	2340
CACTACTTGC ACCACTTTTC ATATAAGTAA TAACCGCATT ATCTGGAAAA TCCTGATCCC	2400
TTCTATGGTG GTCAATAACA ATGGTTTGGG TAAATAAATC ATAAAATTCT TTTGATAATG	2460
TTAAGGCTGT CTTTGAATGG TCTACAAGAA TCAACAAAGA ACGATTGGTC ACCATCCCCA	2520
TTGCATCCTT AACAGACAAC AACTTCGTAA CTCCTTCTTT TTCTATGAAT GAAACAGCTC	2580
GTTCATATC TGGAGACATT TGTTCTTCAT CATAAAGAGC ATAGCTATTT TCAATCACAT	2640
TGCTGGCGAA CAACTGCATA CCTACAGCAG AGCCCAAAGC ATCCATGTCT AAATTTTGT	2700
GACCGACTAC AAAAACCTGA TCTACACTCC GAATCTTATC TGAAATAGCT GTCATCATAG	2760
CGCGGTACG AGTCCGTGTA CGCTTGATTG AAGCAGCAGA CCCACCACCA AAATAAACTG	2820

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GATTTTTCGT TTCGTCGTTT TCCTTAACAA CCACCTGGTC GCCACCACGT ACTTCAGCCA	2880
AGTTCAAAT GAGCAAAGCA ACTTTCCTTA TCTCATCATG ATTTCCATCG CCATAAGAAA	2940
ATCCCATACT TAAGGTCAAG GGCAACTGTC TCTGTTTCGA CTCTTCTCTG AAAGCATCAA	3000
TAACAGAAAA TTTATCATTC ATCAAGCCCT CAAGCACCGT GTAGTCAGTA AATAGATAAA	3060
ATCGATCCAT ACTTACCCGA CGAGAAAACA TCATGTGTTT TTCTGAAAAC TCTGATATAA	3120
AATTAGCTAC AAAACTATTG ATTTGACTAA TATCTGACTC AGAAGTTTCA TCCTCCAAAT	3180
CATCATAATT ATCCACAGAG ACAATCCCAA TCACTGGTCT ACTTGTTACC AATTCATCTG	3240
TTATGGCTTG TTCCCTGGAT ACATCTACAA AATACAAAAC ACCGGAAGAA GCATCCATAT	3300
GAACAGCATA ACGCTTCTCA CCAAGCTTGG CATAAGTAGA CGGATTTCTT ACTGAAGCCT	3360
TGATAATCGT TTGAACAGCT TCTAAATCAA AATCACCATC TTCTTGGTC AAAATCAATT	3420
CAGCATAGGG ATTAAACCAC TCAACCTCTC CAGAAGATAA ATTCAATTTC ATAACACCTA	3480
CAGGCATCTG TTCCAATAGA GCTGTCAAAC TTTCTCCGC TTGGTGGTTT ACATACTGTA	3540
TCTGTCTAC ATCACTCCTT GTATAATGCA CTCTCAGTTT CTTAAATAAA AAAACATAGC	3600
CTCCTACAAA AAGAAACAAA ATTAACACCG TCAACAGATT ATTATTAACA AAAATAATGA	3660
AAGTGGATAA GACTCCAAAC GCAATCAATC CTAAGTAGAAT AGGAAAAATT GGACTTACAT	3720
AAAATTTTTT CATTCAAAAC CTCTTGGCAC CCATTATACC ATAATACCCC TCAAAAAGCG	3780
ACTTTTAAAA AGTGAATCA GTAATTCTAT CAATTATAAG AAAAAGGTAG TTTACAATTC	3840
AGTAAACCTA CCTTTACACA TATTGAAATT AAGATTCTTT AACCTCTAAC AAACCAATTT	3900
CGCCATCCTC ACGACGATAA ATCACATTGG TTGTCTGATC TTCAACATCC ACATAGATAA	3960
AGAAATCATG CCCCAATAAA TCCATTGTA GAATGCTTC TTCCAAATCC ATTGGTTTTA	4020
AATCAATTTG TTTTGAACGA ACAACTTTAG ACTGGACAAT ATTTGAATCT TCCACCAAAG	4080
CATCTGTAAA TAATTGACCA GTTGCTACCT TATTTTATT TTTACGCTCG ATTTTGTGTT	4140
TATTTTACG AATCTGACGT TCAATTTTAT CAGTTACAAG GTCAATTGAA CCATACATAT	4200
CTTGAGATAC ATCTTCTGCG CGGAGAGTAA TAGATCCAAG CGGAATCGTT ACTTCCACTT	4260
TAGCCGTTTT TTCACGATAA ACTTTTAAGT TAATTCGGGC ATCCAACCTCT TGTCTGGTT	4320
GGAAGTACTT TTCGATCTTT TCGAGTTTAG AAACACATA ATCAGCAATT GCTTCTGTTA	4380
CTTCTAGGTT TTCACCACGG ATACTATATT TAATCATATG AGTACCTTCT TTCTAAACAT	4440
TTTGTTTTT ATGATTTTAT TATAACGCTT TCATTCTATT TTTGCAAAT TTTTCCTCAT	4500
CTTACAAGGG AAAATGTTTT TACATCCTTA GCACCAGCTT CTCCAACAG TTTCTTAACA	4560

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CGATTTATAG TTGCTCCTGT AGTATAGATA TCATCTATAA GTAGGATTTT TTTAGGAATA	4620
GTGACTCCAC TTTTAATAAA GAAAGGAAGT TCTGTCCCCA AGCGCTCTGA ACGATTTTTA	4680
GAAGAACTGG CTCTCTCTTC TCTTTTCTCT AATAAATCCA GATACTCAAA GCCTGCTGCC	4740
TCTACCAAGC CCTCAACCTG ATTAAATCCT CTATTAGCAT ATCTATCAGG ACTTAGGGGA	4800
ATTACAACAA ATTGATACTC TTTGTACTTT TTCAACTCCT CACTTAAAAA TGAAGCGAAA	4860
ACTTTTCTTA ACAGGAAGTC TCCATCAAAC TTATACCGAC TGAAAAATC CTTCATAGCT	4920
TGATTGTAAG TAAAAATCGC TCTATGACTG ACTTCAACTC CCTCTTTACA CCAAAGTTGA	4980
CAATCTTGAC ACTTTGTTGA CAACTCTGTT TTCATACAAT TTGGACAGTT CTCTTCCCCA	5040
ATTCTTTCAA AAGTAGAATC ACAGTCTGAA CAAAGACAAG AGTCATCATT CCTCAGAAGT	5100
AAGAGACTAC TAAAAGTTAA AACAGTCTTC ATAGTCTGCC CACATAACAA GCAC TTCATA	5160
GACCAAGCCTC CTTATTCATC ATCTGAATTT CCTTAATCGC CTTCTTGATT GAAGCATTTA	5220
ACCCATCATG GAAGAAAAGC AAATCTCCTG TCGGTCTATC CATGCTTCGT CCAACTCGTC	5280
CACCAATCTG AATCAAACTA GACTTGGTAA ACAAACGATG ATTGGCCTCT ACTACGAAAA	5340
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ACTTTAACTT TGGTGACAAA CGATTCTTGT CTAAGTAGCG ATTAAAATCC GATAACCAAA	5640
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ACTGATGGGT TGTGCAACA ACTAGTGGTG TTCGAAAATA AGGTTCCGAT TCTCCATGTA	5940
GCAAAGCTAT CCCGCAAGAA AAATCCTGTT GCAGGCGCTT GTACAGCTCC AAACAAACAT	6000
CTATGCGAGG ACTAGCCAAA CACACTGCAC CACCCGCATT GATCACTTTA GCCACTACTT	6060
GATAAATCAT TTCTGTCTTT CCAGCTCCTG TTACCGCATG AACTAAGGTT GGCTTTTGCT	6120
TGTCTACTAC TTGAAGCAAT CCCTCTGACA CCTTCTCTTG AAAAGGAGTT AATTGGCCGC	6180
GCCATTTGAG AACATCTTGC TTTGGAAAAT CCTCCTGCGG AAAATAGTAT AAAGTTTGAT	6240
CACTTCTGAC TCGCTTCATC AGCAAGCACT CTCGACAATA GTAAGCACCG ATGGGCAAAAT	6300
ACCATTCTTC TAGAATAGTA CTATTACAGC GTTGACAGAA AAGTTTCCCC TTCTCCTTTC	6360

TCATTGCTGG AAGTTTCTCC GCCAACTGAC GTTCTTCTTC TGTTAATTCA TTCTCAGTAA	6420
ATAAACGACC GAGATAATCT AAATTTACTT TCATACTTCT TTATTCGTAA AAAC TAGCAC	6480
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AAGTCCAAGA AGAAATCAAA AAATCTCGCT TTATCTGCCA TGCCAAGCGT GTTTATAGCG	6600
AAGAAGAGGC TCGTGACTTC ATTACTGCCA TCAAAAAAGA AACTACAAA GCGACACATA	6660
ACTGCTCTGC CTTCATTATT GGAGAACGTA GTGAAATTAA ACGTACAAGT GATGATGGTG	6720
AGCCTAGTGG TACTGTGGT GTTCCCATGC TTGGGGTACT AGAAAATCAC AATCTCACCA	6780
ATGTCTGTGT GGTGCTGACA CGCTACTTTG TGGGTATTAA ACTAGGCGCT GGAGGACTAA	6840
TTCTGTCTTA CGCCGGCAGT GTCGCCTTAG CTGTCAAAGA AATTGGTATT ATTGAAATAA	6900
AAGAACAGGC TGGCATTGCT ATTCAAATGT CTTATGCTCA GTACCAAGAG TACAGTAACT	6960
TCCTTAAAGA ACATGGTCTC ATGGAGCTGG ATACAACTT TACAGATCAA GTCGATACGA	7020
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TGTAAACAAT GAATAATACA GCGTTTCGTT GACATTCTCA CAACTACTTT AGCGAGCAAA	7200
ATAAAAAGAG GCGTACCAA ATATACTAGA AAATGAAGCA ATTCAAACGA AACCTGATAT	7260
CGTTTTCTTT CACACCTATT TACTAGAATT AGCTGAACGC AATCACTTGA AAATTAATGA	7320
CTTTGATCTA TGATATATAG AAATGGTATG GATAGCGTTA TACTAAAGAT ATCTTATACA	7380
AAGAGGTATT CATATGTCTA TTTATAACAA CATTACTGAA TTAATCGGTC AAACACCGAT	7440
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ATTTAATCCT GGTTCATCTG TAAAAGACCG TATTGCCCTT AGCATGATTG AAAAAGCTGA	7560
ACAAGATGGT ATTCTGAAAC CTGGTTCTAC TATTGTTGAA GCAACAAGTG GAAACACCGG	7620
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AGTAGGTACT GGTGGAACGA TTTCTGGTGT TTCTCATGCA CTCAAATCAG AAAATTCTAA	7980
CATTCAAGTT TTTGCAGTAG AAGCAGATGA ATCTGCTATT CTATCTGGTG AAAACCTGG	8040
TCCTCACAAA ATTCAGGTA TCTCAGCTGG ATTTATTCCT GATACACTTG AACTAAAGC	8100

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CTATGATGGT ATCGTTCGTG TAACATCAGA TGACGCTCTT	GCACTCGGAC GTGAAATTGG	8160
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GGTTGCCAAA AAATTAGGTA CAGGTAAAAA AGTCCTTGCC	CTAGCACCAG ATAACGGTGA	8280
ACGTTATCTC TCTACAGCAC TTTATGAATT GTAACCGTCC	AATAACGAAG TCTATTGAAA	8340
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TTCTTGACAA ACTTTAGTCC ATGGTAAATA GGCCTCTAAA	ACCTCTTTGT TTACGAGAGT	8460
TTCCACGTTT GGAAGACATT CTAGAAGATA GGATAGATAT	TTCTCACTAT TTATAATGGA	8520
TTGAAATAAG ATATGAACAA ATCGATTAGA ACATGATGGT	AAAGCGTAAT CCCTTGTTTC	8580
TCAGCTTTCC CAGACAAAAA AGTCCAATAG TAAGTCAGCT	GACTATCACT CTCTAGCACC	8640
CTATAAGAAG TTTTCATCCGC ATGAAGTAAG GGCTGAGTCA	ATAGTCTCTC TCGCAAGAGG	8700
TTATAAAGGG GCTCCAAATA GTATTGACTC GTCTTGATAT	GCCAATTAGA GATTTCCTTA	8760
CGTGTGATTG GTAAACCCAT CCTAGCCCAA TCTTCTTCTT	GGCGATAATT GGGTACCTTC	8820
AGATTAAACT TCTGATGGAT GGTGTGAGCG ATAATAGAAG	CTGAGCCAAA GTTATGCGCT	8880
AAAGGGGCTT TAGGAATAGG AGCTTTCACA AGCTTATCCA	GATGATTATC TTTTACTCGT	8940
TATGGACAAT GCTATATGGC ATAAATCAAG TACCTTAAAG	ATTCCGACTA ATATTGGCTT	9000
TGCATTTATT CCTCCATACA CACCAGAGAT GAACCCCAT	GAACAAGTGT GGAAAGAGAT	9060
TCGTAAACGT GGATTTAAGA ATAAAGCCTT TCGAACTTTG	GAAGATGTCA TACAAGGACT	9120
GGAGAAGGAG GTGATAAAGT CCATCGTTAA TCGGAGACGG	ACTAGAATGC TTTTGTGAAA	9180
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GAGGTGTACT ATTCTAGTTT AAATCCACTA TATTTGGGGA	GTGATAGAAA AGCCCTTCAT	9360
CAGCCAATCT ACTTGTTTCTG GTGCGAGAGC TTTGACATCC	TTTCTGTAC TGGACCAAGT	9420
CAGTTTTCCTG TTCTCAAAGC GTTTATATAA TATCCAAAAT	CCTTGACCAT CCCAGTAAAG	9480
AACTTTAAAG CGGTCTTTAC GTCCACCACA AAAGAGAAAG	ACTTGATCGG AGAAAGGATC	9540
CAATTCAAAG TGGGTTTAA CTACATAGGC TAATGAGTCT	ATTCCCTGCC TCATATCTGT	9600
CTTGCCACAA ACAAGGTGAA CTTGACCTAA ATCACTTAGT	TGAATTATCA TAGTACAATA	9660
CCTTTCCTCC GATAATTATT TTTTATCTGG TATACTGGAA	GTTGGGGAAT TAGGATAGAT	9720
ACCTTGTTAT GACGCGCTTA CTATGAATTT GAAGTATAGT	CTCCTAAATG CACTTAGCCC	9780
TTATTATAGG GCTTTTGTG TTAATTATTC TAATCGAGTG	AGACTGGGGA AAAACAATT	9840
TCAGGAAAAA TCTAAGCCCT ATACAAAAA GGAAGCAATT	TGCTTCCTTT CTATTATTAG	9900

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TTATTCAAGG CTGCTGCCAT TGTAGCTGCA ACTTCAGCTT CGAAGTCGTT TGCAGCTTTC	9960
TCGATACCTT CACCAACTTC AAAGCGAGCA AACTCAACTA CCGAAGCGTT AACTGATTCA	10020
AGGTATGCTT CAACTGTCTT GCTGTCATCC ATGATGTAAA CTGTGCAAG AAGTGTGTAA	10080
GCTTGGTCAA CTTTAGTGTT ATCAAGCATG AAGCGATCCA TTTTACCTGG AATAATTTTG	10140
TCCCAGATTT TTTCTGGTTT GCCTTCTGCA GCCAATTCAG CTTTGATGTC AGCTTCAGCT	10200
TGAGCAATAA CATCATCAGT TAATTGAGCT TTTGATCCAT ACTTCAAGTG TGGAAGAGCT	10260
GGTTTATTAA CCATTGCACG GCTTTCGTTG TCTTGGTCTGA TAACGTGATT CAATTGTGCC	10320
AACTCATCTT TAACGAATTG CTCATCCAAT TCTTTGTAAG AAAGAACTGT TGGTTTCATC	10380
GCTGCGATGT GCATTGACAA TTGTTTAGCA AGTGCTTCGT CTCCACCTTC AACAACTGAA	10440
ATAACACCGA TACGTCCACC GTTATGTTGG TATGCTCCAA AGTGTGTGC GTCTGTTTTT	10500
TCAATCAATG CAAAGCGACG GAATGAGATT TTCTCTCCGA TAGTTGCTGT TGCAGATACG	10560
TATGCAGCTT CAAGAGTTTC ACCTGAAGGC ATTATCAAAG CAAGAGCTTC TTCGTTGTTA	10620
GCAGGTTTTC CTTCAGCAAT GACTTTAGCT GTAGTATTTA CCAATTCAAC GAATTGAGCG	10680
TTTTTTGCAA CGAAGTCAGT TTCAGCGTTT ACTTCAATAA CTGCTGCAAC ATTACCGTTA	10740
ACATAACAC CAGTCAAACC TTCTGCAGCA ACACGGTCAG CTTTCTTAGC TGCCTTAGCC	10800
ATACCTTTTT CACGAAGCAA TTCAATCGCT TTTTCGATGT CACCGTCTGT TTCTACAAGC	10860
GCTTTTTTAG CGTCCATAAC ACCGGCACCA GATTTTTCAC GCAACTCTTT TACAAGTTTA	10920
GCTGTAATTT CTGCCATTTT AATTCTCCTA TATTTTTTGA AAATAGGAGA GCGCGGCTAA	10980
GCCCCGCCTC CGG	10993

(2) INFORMATION FOR SEQ ID NO: 16:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 8411 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

CGACGGGGAG GTTTGGCACC TCGATGTCGG CTCGTCGCAT CCTGGGGCTG TAGTCGGTCC	60
CAAGGGTTGG GCTGTTTCGCC CATTAAAGCG GCACGCGAGC TGGGTTTCAGA ACGTCGTGAG	120
ACAGTTCGGT CCCTATCCGT CGCGGGCGTA GGAAATTTGA GAGGATCTGC TCCTAGTACG	180
AGAGGACCAG AGTGGACTTA CCGCTGGTGT ACCAGTTGTC TTGCCAAAGG CATCGCTGGG	240

	240	
TAGCTATGTA GGAAGGGAT AAACGCTGAA AGCATCTAAG TGTGAAACCC ACCTCAAGAT	300	
GAGATTTCCC ATGATTATAT ATCAGTAAGA GCCCTGAGAG ATGATCAGGT AGATAGGTTA	360	
GAAGTGGAAG TGTGGCGACA CATGTAGCGG ACTAATACTA ATAGCTCGAG GACTTATCCA	420	
AAGTAACTGA GAATATGAAA GCGAACGGTT TTCTTAAATT GAATAGATAT TCAATTTTGA	480	
GTAGGTATTA CTCAGAGTTA AGTGACGATA GCCTAGGAGA TACACCTGTA CCCATGCCGA	540	
ACACAGAAGT TAAGCCCTAG AACGCCGAA GTAGTTGGGG GTTGCCCCCT GTGAGATAGG	600	
GAAGTCGCTT AGCTTTAATC CGCCATAGCT CAGTTGGTAG TAGCGCATGA CTGTTAATCA	660	
TGATGTCGTA GGTTCGAGTC CTACTGGCGG AGTAATtGAT AAAAGGGaAC ACAGCTGTGT	720	
TCCTCTTTTT GTATCAATTT GTATCACCAA GCATTTTCAT AAGGAAGTCT GTTATTTCTT	780	
GAGAACTTTC TTTTTTTCCA TGTGCAATCC AAGTTTGGCA GACACCAAAA AGTGCATGAG	840	
TTAGATAGAT GCTACTATAT TCTAATTCAG TGGTATTTAG ATTCAAGTGC ATAAATCGCT	900	
TTTGTAAATC TGTACTAAGC ATGATATGAA GTTTATTTTCG TAAGAAATTT TGGATTTCTT	960	
TAGTCCCATT TTCAGAAAGA AGGGCAGCCA GAAGTGGTTC TGAAGCTAGA TATTCAAAAA	1020	
CTTCTAAAAT AGCGTCTCTT TTGTGATGAG CATGTTTTTG AAAAATATAT TCAAATGTAT	1080	
GGAATAGCTT GCTTTGATAG TGCTCAATCA TATCATACTT ATCCTTATAG TGAGTATAGA	1140	
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GCTGTTCCAT CAGTAATTGT ACCATAGCAT TTCAATAGT TCGCTTTGTT TTTAAGCGTT	1260	
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TTTTTTATCT TGTAATTTAG ATTTTTTAAT GTATAATCTA TTATATCAAA ATTTTAGACA	1380	
ATATGTTTAA AAAAGGAGAA ACTAAGTTTA AAGAATGGAA AGCAATTTAA AAAAAACCA	1440	
CCTTTATTAT TGTCATGATC GGGATTTCTC TTATCCAGA TCTGTACAAT ATCATATTTT	1500	
TGTCATCAAT GTGGGATCCA TATGGGCAAT TGTCTGACTT ACCTGTGGCA GTTGTAATA	1560	
ATGATAAAGA GGCTTCCTAT AATGGTAATA CTATGGCAAT AGGAAAAGAC ATGGTGTTCA	1620	
ATTTAAAAGA AAATAAAACC TTGGATTTTC ATTTTGTAGA TGAAGAGGAA GGAAAGAAGG	1680	
GATTGGAAGA TGGCGATTAC TATATGGTAG TGACTTTACC AAGTGATTTA TCTGAAAAAA	1740	
CAACTACATT ATCCAATATT CAATCGACAG CAGCTTATCA ATCATTGACA AGTGAGCAAC	1800	
AACTGAGAT AAGTGATTCT GTATCTCAA ATTCAACTGA TAGTATTCAA TCGGCTCAGT	1860	
CAATTGTAGC TTTAGTACAA GATTTACAGG GAAGTTTGA AAACCTTACAA AATCAATCTT	1920	
CTAATCTTTC GACTTTAAAA AATCAATCTA ATCAAGTATC ACCTATTACT TCTACTTCTT	1980	
TGATAGGATT GTCAAGTGA TTAACAGAGA TACAAGGAGA TGTACTAGC AAATTAGTTC	2040	

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CTGCCAGTCA GTCGATTGCA TCAGGTGTAA ACGCATATAC TACAGGTGTT GATAAAGTTT	2100
CTCAGGGCGC AAGTCAACTA AGTGAAAAAA ATGCCACCTT GACAGGTAGT TTGGATAAAC	2160
TAGTTTCAGG CTCAAACACC TTGACACAAA AATCTTCTAG ATTGACAGCA GGAGTTGGTT	2220
AATTACAATC AGGATCTGGG CAATTAGCAG ACAAATCCAG TCAGTTACTT TCAGGTGCTT	2280
CTCCATTAGA GAATAGAGCT AATAAATTGG CAGATGGATC TGGGAAACTA GCAGAAGGTG	2340
GAACAAAGTT AACTTCTGGA TTGGAAGATT TACAGACAGG ACTTGCTTCT TTAGGACAAG	2400
GACTAGGTAA TGCTAGTGAT CAACTCAAAT CAGTATCAAC AGAATCTAAA AATGCAGAGA	2460
TTTTGTCAAA TCCACTCAAT CTTTCAAAAA CAGACAATGA TCAAGTTCCT GTAAATGGAA	2520
TCGCAATAGC TCCTTATATG ATATCAGTTG CTCTTTTTTT GCAGCAATAT CAACAAATAT	2580
GATATTTGCG AAATTGCCTT CAGGACGTCA TCCAGAGAGC CGTTGGGCTT GGTGAAATC	2640
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TCAGCTTATT GGTTTAACTG CTAATCATGA GATGAGAATA TTTATTCTCA TCATCCTAAC	2760
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TGCTTTGACA AATGATTTCT TTAGATCTAT TAATCCCTGG TTACCAATGA GCTATTCAGT	2940
TTCGGGATTA CGACAAACAA TCTCTATCAA CAAGTCATTT TCCTAGCTGT CATACTAGTT	3000
CTATTTACTA GTTTAGGTAT GCTAGCCTAT CAACATAAGA AAATGGAAGA AGATTAAAAA	3060
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ATGAAGGAAA GTGTAATAGT TCCTTTCCCC TTGGGAATGT CAACTTTCAT AAATCCAGTT	3240
TGAGCTTGTT TAATTCTAT TTTCTTACCA TCTTGGTAGG CAGACCAACC TTTGTCATAA	3300
GGAATGGTGA AGAAAATAGA TGTATCTTGT TGGACATCAT ATGTAGCAAA AACCTTGTTT	3360
TTAGAAGTTG ATACTGTGAC AGGTGTTCT TTAATTTTTT GAATTGCCTC GGTGAAAGTT	3420
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CTAACATTGA TATTGAAAGT TTTTCTCTCT TTAGTATATC CTAGATTAAA GAAGGAGAAG	3540
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TCAATTTGAT ACTGGATTGC TGCATCTTCA TTTGAAGAAC TTGTGACACT AATCAAATCA	3720
TTAGTATTTT CTATTTTTC TGTTTTTTCA TAAGGTATTG GAGAAAAATA ATCAAATTG	3780

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ACGTTAGCAA GTTGATTAA AAATGAGGCC TGATTATCCA AGGTATGTTT ATTGAACTTG	3840
ACATCATTGT AACAGATTG ACTCGCAACT GCAATCGGAA GAGAGTATTG ATTTTCATAT	3900
AGGGTAAGAT TATCTTTTGG ATAGATATCT TTAAAGCCAT ACTTATCAAT AGGACTGTCT	3960
GAGATATTGT ACTGGATACC AAATAAACTA TCAGCCAAAA TACTATTATT TGCATATCGG	4020
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CGATTTTCGAA CAGATGAAAA TTGAGAGATT CCATTGTAGT TGAATTTTCAT ACTGTCATTT	4140
CCTGCTCTGAG TTTGTAGTTT TTCAGTACGA GTAAATTGAT TTCCAATATA TGTGAGAAA	4200
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GCAATTCCTG CCATTTGAGA TGAAGCATTT AAACCTCATTT CAACCAGTAT AAATAAAGAG	4320
ATTAGAATGG CAAATAGATT CACAGATATA AACTTTTTGA TAACTGCAAG GAGTAAAAGA	4380
GAATAGACAA CCAAAAATTC AAGAGTAAGC AGAATATTCA AATCTGTTAA AAAAGAATAA	4440
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AAATTCAGCA CTTTAAGTTC TTTTCAGACGC TTAAAGACTT CTGCTGCTGT GTAAATTAAC	4560
AAGGTAGAGA AAATCCAAGC ATAGCGATGT AAAACATGT TTGGAGTATG CATGCCTTGC	4620
CAAAATAAGT CAAGAGCTTC TATGTAAAAG CTTGCAATTA GAAATGCAAA GAATATTACA	4680
TATATGAGTT TCACGTGAAA CTTAATAGAT TTCAGCGTAA AAAATAAAAT GGTCAAAATA	4740
AAGGGAAATA GTCCAACAAA AATCATTGGG ATGGCCCCAT ACTTTGTTGT GTCAAAGGAA	4800
CCAATGAATT GCTTAGCAAA GAGATCAAGA TACCAGCTAC TTTCAGTTTG AAACCTTGTA	4860
ACTTCAGTCA ATTTTCCCC ATGTGTCTGT AAATCAAATA GAGTGGGAAG AGTCATAATC	4920
AAACTAGCCA TACCAGCTAA AAAGGAGATA ACTATGAAAT CAAGAACAGA TGATTTTCGA	4980
GTCTTAAAGT CCCACGAAAT TTGACAGAGA TACCAGAAAA TAAGAAACAA TACTGTCATA	5040
TATCCAAAAT AATAATTTTG AATAAATAAG ATTGACAGAC TTGTAAAGTA CAATAGGAGT	5100
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TCTAGCCAGG TTTTATCTC TAATTGACTG ACAGTGAAAC TCATCAGAGC ATAGGAAGTA	5220
GATAAGGCTA GTTTTAAAA CTGAGGGATA GATTGAAACA ATTTATTCAA ACTAAAAAAG	5280
GTTGACAGAC CAATCAATCC AAATTTTAAG AGAGTTGTCA GATAGATAGC ATCTGGCATA	5340
TTTCGTTAGAT CAAAAAGTA AACCAGAGGC GCGAGAAAAC TACCAAGTA ATAAGTAGAT	5400
AGGGCATAGA AGTTTAGCCC TAGACCACTT GTAAAGGTGT AAAACAGATT ACTATTTCCA	5460
TGTAGGATAT TTCGTAAGGC TACATCAAAA ATAACGTATT GATGAAAGCC ATCTCCTAAT	5520
AGAGGAGAGT TGTCGCTATT CAGTAGATA CTTTGAGATA GATATACTCC AGACATAATC	5580

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ACTACAGGAA TGATGAAAGA AATAAAATAG GTTCGATATG TTTTAAAAA TGATTTTCATG	5640
TTACCTCGTA GAATGATAGA AAACCTCAGTT GGTAAACCCA ACTGAGTTT GAAGTTTAT	5700
TTAGTCTTTC CAAAGTTCTT TAACCTTTGC TTGTACTTCT GCATTTTCTA GGAATTCATC	5760
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CAAAGTTTGA ATAAATTCGT GGTTCATGGCT GGCAAAGATG ATTGATTCTT TAAAGTTTTT	5880
CAATCCATCA TTCAAGCTTG AGATAGATTC CAAGTCCAAG TGATTTGTTG GATCATCAAG	5940
TACAAGGACA TTTGATTTTA AGAGCATGAG TTTTGAAAGC ATGACACGAA CTTTTTCTCC	6000
CCCTGACAAG ACATTTACAG GTTTGTAAAC TTCATCTCCA GAGAAGAGCA TACGGCCGAG	6060
GAAGCCACGT AGGAAAGTAT TGTCTCTTC TTCTTTACTT GCGAATTGAC GCAACCAGTC	6120
AAGAATTGAT TCTCCTCTG CAAAATCAGC TGAGTTATCT TTTGGTAGGT AAGATTGACT	6180
AGTTGTAAT CCCCCTTGA CAGTTCCTTC ATAGTCAATA TCTCCCATGA TTGCACGAAT	6240
TAATGCAGTC GTTTGAATAT CATTTTGTCC AATAAGTGCT GTCTTATCAT CTGGACGCAA	6300
GATGAACTA ATATTATCCA AGATAGTTT ACCATCAATC TTTACAGTTA AATTTTCTAC	6360
TGTCAGAGA TCATTACCAA TCTCAGTTC CGCTTTAAAG TTGATAAATG GATATTTACG	6420
ACTAGATGGC ACAATCTCTT CTAGCTCAAT CTTATCAAGC ATTCTCTTAC GTGATGTTGC	6480
CTGCCCTGAC TTAGAAGCAT TGGCAGAGAA ACGAGCAACA AATTCTTGCA ATTGTTTAAT	6540
TTTTTCTTCT GCTTTAGCAT TACGGTCTGC TAGCAATTTA GCAGCAAGCT CAGAAGATTC	6600
CTTCCAGAAG TCGTAGTTT CGACATAGAG TTTGATTTTT CCAAAGTCAA GGTGCGCCAT	6660
GTGAGTACAA ACTTTGTTTA AGAAGTGACG GTCGTGGGAT ACTACGATAA CTGTGTTATC	6720
AAAGTCAATC AAGAAGTCTT CTAACCAAGT AATCGATTGG ATATCCAAAC CGTTAGTAGG	6780
CTCGTCCAAG AGAAGAACAT CTGGTTTACC AAAAAGTGCT TTGGCGAGGA GAACCTTTAC	6840
TTTTTCACCG TTGGCCAATT CGCTCATGTT TTGGTAGTGT AATTCTTCTG GAATGTTTAG	6900
GTTTGAAGT AGTTGAGAGG CTTCACTCTC TGCTTCCCAA CCTCCAAGTT CGGCAAACTC	6960
TCCTTCGAGT TCGGCAGCAC GAACCCCGTC CTCGTCTGAG AAATCTTCCT TCATGTAGAT	7020
AGCATCTTTC TCTTTCATGA TGCTATAAAG TTTTTCATTT CCCATGATAA CGACATCAAT	7080
GGCACGTTCA TCTTCGTAGT CAAAGTGATT TTGACGAAGA ACAGAGAGAC GTTCATCTGG	7140
ACCAAGAGAG ATGTGACCAG TAGTAGGTTC GATATCTCCA GCTAAAATTT TAAAAAAGGT	7200
TGATTTTCCG GCACCATTAG CACCGATTAA TCCGTAAGTA TTTCTTCTG TAAATTTGAT	7260
ATTGACATCA TCAAAAAGTT TGCGATCACT AAAACGTAGT GAAACATCAG ATACTGTAAG	7320

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CAATGTTTT CTCCTATATG TGTAATATAT TTATTCTACT AGAAAATACA GAAATATTCA	7380
AATTTTTATT TGTCAATTTT GTGTAAATTA TATTTACAGT ATCCTTTACA CAAATCTGTA	7440
AAAAGCAAGG CTGATTTATT TTGATAAATT ACGGTTATTT CATTAAAAAA ATGCTATAAT	7500
TGAAAGGACT ATATCGAAGG AGAACAAAAT GACTAAACCC ATTATTTTAA CAGGAGACCG	7560
TCCAACAGGA AAATTGCATA TTGGACATTA TGTGGGAAGT CTCAAAAATC GAGTATTATT	7620
ACAGGAAGAG GATAAGTATG ATATGTTTGT GTTCTTGGCT GACCAACAAG CCTTGACAGA	7680
TCATGCCAAA GATCCTCAAA CCATTGTAGA GTCTATCGGA AATGTGGCTT TGGATTATCT	7740
TGCAGTTGGA TTGGATCCAA ATAAGTCAAC TATTTTATT CAAAGCCAGA TTCCAGAGTT	7800
GGCTGAGTTG TCTATGTATT ATATGAATCT AGTTTCGTTA GCACGTTTGG AGCGAAATCC	7860
AACAGTCAAG ACAGAGATTT CTCAGAAAGG ATTTGGAGAA AGCATTCCTGA CAGGATTCTT	7920
GGTCTATCCA ATCGCTCAAG CAGCTGATAT CACAGCTTTC AAGGCTAATT ATGTTCTCTG	7980
TGGGACAGAT CAGAAACCAA TGATTGAGCA AACTCGTGAA ATTGTTCTGTT CTTTAAACAA	8040
TGCATATAAC TGTGATGTCT TGGTAGAGCC GGAAGGTATT TATCCAGAAA ATGAGAGAGC	8100
AGGGCGTTTG CTGCTTTAG ATGGAAATGC TAAAATGTCT AAATCACTAA ATAATGGTAT	8160
TTATTTAGCT GATGATGCGG ATACTTTGCG TAAAAAAGTA ATGAGTATGT ATACAGATCC	8220
AGATCATATC CGCGTTGAGG ATCCAGGTAA GATTGAGGGA AATATGGTTT TCCATTATCT	8280
AGATGTTTTT GGTCTGCCAG AAGATGCTCA AGAAATTGCT GATATGAAAG AACGTTATCA	8340
ACGAGGTGGT CTTGGTGATG TGAAGACCAA GCGTTATCTA CTTGAAATAT TAGAACGTGA	8400
ACTGGGTCCG G	8411

(2) INFORMATION FOR SEQ ID NO: 17:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 9064 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

TGCCGTACTC AAGTACAGCC TGCGCTAAGT TTCCTAGTTT GCTCTTTGAT TTTCATTGAG	60
TATTAGTAAC CAAAATCCGA CCACATAGCC AGCCCCTATG AATATAGCCA TTAAAGCTAG	120
CATGGAATTT AGGAAATTAA AAACCACCGC AGATACAAAG GTTAGCACAA AAACATTAAA	180
AGCAATGGTG TCAGAAGCCA AGACTAGAAT ATAGGGTGTC AACCGATCTA AAGTTTGGGA	240
ATCTAGGAAA AATAAGTGT TATACATGAT GACCTCCTCT ATGGCTGAAA AGCAAGCCTT	300

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TTGTTTTTTT ACCCCAAGAC CCTATGTAGA AAAGTGAGCA AAAACGGGAA GGTCGCTACA	360
ATATTATTGA TCACATGCAC CGCATAGGAT GGATAAATGC TCTTGGTATA GCGGGTCAAA	420
CCAGCAAAGA TGATTCCAAC TGTTGCAAAG ACGAAGATAT CTAACAGACT AGGCAGGCTT	480
GAAAAATGAG GGAGAGCAAA TAAAATAGAA GGAAGAAGCA AATCAAGACC AAATCGCGAA	540
TGCTTAAAGA AAGCATGTTG CAGTAATCCT CTATAAATCA ATTCTTCCAT CAGTGGAACC	600
AGAAAGAACA GGGCTATATA AATACCTAGC TCTGCAAAGT TAGTCCCACT ATAACCAATC	660
AATACAGCCC AACCTTCCGC AGTTGACTGA ACATGTTTAG CTGTCTGAAC GTTAAAGAG	720
ATCTGGAACA CTAGCACTAA TACTGTCAAA ATCGAATACC AAAGCCATTT TTTTCTTGGA	780
ATGCGGAAGA GATAACCATG GCCTGTCTTA ACAAGAACCA CAATCATGAC TCCAATAAAA	840
AGTAACTCA AGATATTTTG AATCCAGAAT AAATTGCCTA TCTGAGAAGA AAATTGCCAA	900
TAGTTTTTGA CGATAAGCGT CAGCTGAGAA AGACTAAATA CGAAAAATAA GTAAGAGAAG	960
ACTGCACTTA TTTTGAATAG AAGTTGATAC TTTTTCATAG AAATCCTCCC TACTATGACC	1020
TCACCTTGTC AGGCTCTACT GCTGTAAGAT TAAGAAGACA GTTTGTTTTT TTTAAGGCTA	1080
ACCTGACTAC TAGATAATAG ATACATTAAG GCATTAAAGA CAATGAAAAT ATGTCCATAG	1140
AATAAATCA ACCTCGCATC CAAACCAAGA TAAAGTTTGA TTATCAAAAA GATGAGCAAA	1200
AGAATTGAA ACCATAAGGT TTTTCCAAAA ATAAATTTAA AGCGATTTCG AATATCTACT	1260
TCCTTGATTT TTACCGCCAC CCCTTTATTA GCAAGAAGGA AAACCTCTGC TTCAAACAAA	1320
CCACTGTAAA GAACAAGCCA CCCAATAGAT ACGATAGAGA TTTGTAAAAA TGTCCTTAAA	1380
AGAATATCCA ACACACTACT CAAGAAAATA ACAAAAAATA ATCTGTATTT CATATTAAAT	1440
ACCTCCATTC ATTTATTTCA CTAACAATTT AATAGAGCCT TCTACTCAA TATCCTGTCA	1500
GAAAAGGATA GAAAGCTACT TTTTATAATA CTTCAAGCCC CACATGAGCA GAAGCGTGAT	1560
AAACAAGCAG AGAATACACC TATATAAGCG ATTAGTTGTT GATAGAATTC TGTTTCTGAA	1620
ATACCTCTAT ACAAACAAAT GACAAACATA AAATCTGCCA AGCCGATAAA CATAAGTTGA	1680
TTGGTTCTAG GACTAACCAA ATCATCATTT ACTTATATTT AAGAGTATCT CTTTATTTT	1740
AATGTATGTT AGCACTGAAA AGCAAGACAG GCCAATAATA TTTAAATGA ACAGTAACGG	1800
GGTTAAGTCT CTAaaaaaat TATCTACTGA CACTACAAGA AATACTATAC ATATTATAGT	1860
CGAAACTATC TTTTCTTAT CCATAATTAT TTAATCCTTT CCTAACAAAT CCAGCTTATC	1920
AATCAAGAGC GATTTTAAAC ATAATGTAGC AGCACCCTTT GCAACTTTGA CAAGTTTAGT	1980
ATATCATTGT TTTTAAAT TTTTCATCCA AATCTTGAAT TGTCATCGAA ACATCTTGAA	2040

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TTGTAAAAA ATTTAAAAAG TAAGCATTAA AACATACCTT TCCTCTTTAT ATTGTATTGA	2100
TACCAACTTG TTTGTAGACT TTTCATCCTG CTATCACATA TCATTTTGAC AGGCGAAACA	2160
ATATTAAAGA AACTCCCCTG TAAATTAAGC TAGCAAATAC AGGGGAGAAA TTTATTTT	2220
AGAGAGTACT ATCCGTATCC TTTTGGGAAG ATTTTGAAAA TATTTTCTA ATTAAGTCAT	2280
CCATATAAGG ACCAAATATA CCAACTACTA AACCAATAAT AAAACTTTTA AAATCCATAA	2340
TTACCACCAA CATATTGCTG CATAGGCTAC ACCTCCAAGT ATAGCTCCAC CTGCAGCACC	2400
AGTTACACCT ATTCTATAG CAAATGGTCC CAATAGAAAT GTCAAACCGT TGTGACACAC	2460
CCATCAATTG CGCCATATGC AACCCTGCT GCACAATAA TTTTCTTCC CCAATCAATA	2520
TCTCCACCTT CAACGCAAGC AAGCATTTCA TTATCCATAA CTGCAAATTG TGACATCATT	2580
TTGTATCCA TATAGTGAT CACTTTTCAG TTACGGAACA AGTTTAATAT AAAAATTATC	2640
AAAAAACAT AGGCAATAA GAGAAAAAT AATTTATCAT AGATTAGAA TAATATGACA	2700
AAACAATTCA ATGATGTTAA TTCAATAGTC TTTTGTTTT TATCGGAGAT ACTTATGGAT	2760
AGATAATAA GATAGGTTG AAAAGCGAAG AGAATAATA AGAATATAGC CTCATAAAA	2820
TTTAGCTTTC ATTTTATGA TGTAGCGTA TAGGCTAAAT ATCCACAAAC CACTGCTCCT	2880
CCAATTCCTC CTATTGCAGC GCCCATGGT CCTAGAAGTC TCCCATATTT CACTCCACCC	2940
GCTGCACAAC CTAAAGCAGC AACTACAGCT GCTCCTCCG AATTACCTCC ATAAACCTCA	3000
CTCAGCATTG TTTCATTTAT ATTACAATAA GTATTCATAC AAGTCTCCTT TTATTAAAT	3060
CCACCCGTTG CCCCTGTTAC TCCTGCCCAA AGATCCACAC CAAATTTAGC TCCTATGTAT	3120
CCACATGCTC CCATAAATGG TGCTCCAACA CCACTCGCAG CACAAATAGC TGTCCCTAGC	3180
CCCCAGCCAC CAAAAGCAGC ACCACCACCT TCTAAGACAT TAGTTTGCCA ATTATCTTG	3240
CCTCCTCAA TACTAGATAA CATAGTTATA TCCATTTTAT GAAATTGTT CATAATTTT	3300
GTATCCATGA CAAATACTCT TTTTATTTT TAATTTTGT CTGTTGTAA CTTTGACAAG	3360
TTTAGTATAT CATCGTTTT TAAATTTT CATCCAGATT TTGAATAGTC ATCGAAACGT	3420
CTTGAATTGC AAAAATTACA TTAGACTTCC TGCAAACTA GAATCCTAGT TCATGATTGA	3480
TAATACCAGC ACTCAAATC ATTCGTAATC CGAAGCGTT ACGATGACTT CGATAGGTTG	3540
TTGAAAACAT TTTAAACGTT TTTACTTTGG CAAAGATGTT CTCAACCTTG CTTCTCTCCT	3600
TAGATAGCGC ATGGTTACAG GCTTATCTT CAACTGTTAG CGGTTTGAGT TTGCTGGATT	3660
TACGTGAAGT TTGTGCTTGA GGATATATCT TCATGAGCCC TTGATAACCA CTGTCAGCCA	3720
AGATTTTACC AGCTTGTCG ATATTTCTGC GACTCATTTT GAACAACTTC ATATCATGAC	3780
AATAGTTCAC AGTGATATCC AAAGAAACAA TTCTCCCTTG ACTTGTGACA ATCGCTTGAG	3840

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TCTTCATAGC GTGAAATTTT TTTTACCAG AATCATTCGC TAATTCTTTT TTTAGGGCGA	3900
TTGATTTTTA CTTCGTCGC ATCAATCATT ACCGTGTCCT CAGAACTGAG AGGAGTTCTT	3960
GAAATCGTAA CACCACTTTG AACAGAGTT ACTTCAACCC ATTGGCTCCG ACGGAGTAAG	4020
TTGCTTTCGT GAACACCAAA ATCAGCCGCA ATTTCTTCAT AAGTGCGGTA TTCTCGCACA	4080
TATTGAAGAG TGGCCATAAG AAGGTCTTCT AGGCTTAATT TAGGTTTTCG TCCACCTTTT	4140
GCGTGTTTAA GTTGATAAGC TGTTTTTAAT ACAGCTAGCA TCTCTTCAA AGTCGTGCGC	4200
TGAACACCAA CAAGACGCTT AAATCGTGCA TCAGTTAGTT GTTACTTGC TTCATAATTC	4260
ATAGAATAT AGTAAATGA AATAAGAACA GGATAAATCG ATCAGGACAG TCAAATCGAT	4320
TTCTAACAAT GTTTTAGAAG TAGAGGCGTA CTATTCTAGT TTCAATCTAC TATACTATAC	4380
CATATTTTGT TTCGCAGGGA ATCTATTATA AAAGGTAAG TATTGCAAAA ACACTTACCC	4440
TTTTCTTTTA TACTTCATTA AGCTCTACTT TTTATAATAC TTCAAGCCCC ACATGAGCAG	4500
AAGCATGATG ATTAAGCAGA GAACAGCGCC AATATAAGCG ATTATTTGTT GGTAGGATTC	4560
TCCTGCTGTG ATACCTCTAT ACAACAAAT AATAGACATA AAACCTGTCA AGCCGATGAA	4620
CATAAGTTGA TTGGTTCTAG GACTAACCAA ATCATCATCT TCAAACCTC TTATCCTCAT	4680
TTCCCTAGTG AGATAACAG TAACCAAAT AGAAGCCAAG TTAATAACTA CTAAGAGAAA	4740
TTGGAAACT ACGGAAAAAT TTAAGAACTG ACGAGATAGA AATAGATAAG TAGAAACAAG	4800
CAAGGGCAAC TGACCTAAGA ACAATCTCGC AAGGAAGATG TTCCGTTTTT TAGCAAGAAA	4860
AGTTTTTATT TCTTTTCTCC TTTCTTTTTA TTGATAGCAA AATAGATCAT AACTGCAATC	4920
ACATAGGCTA TGGTATAAAA TAGCTGATAC CAAGCACTCT CCCTAAGCGG ATATAGAAAAG	4980
ATGGACATGA TTAGATACAG AACGAAAATA ATCAGTATTT TTTCTTCAT AAGATTTCCT	5040
CCTAAATGTG CGATTTATCT TAGTTGAGCA AGAACATTA CACTGCTAGT ATAGCACTTA	5100
TTTGTACCTT GGATCACTCA AATCATAAAT GGTCATCAA ACCTCTTGAA TTGTAAAAAT	5160
TAAAAAAGCA AGCATGAAAA ACATACTTTC CTCTTTATAT TGTATTGATA CCAACTTGTT	5220
TGTAGACTTT TCATCCTGCT ATCAGATATC ATTTTGACAG GCGAAACAAT ATTAAGAGAA	5280
CTCCCCTGTA AATTAAAGCTA GCAAATACAG GGGAGAAATT TATTTTGTAG AGAGTACTAT	5340
CCGTATCCTT TTTGGAAGAT TTTGAAAATA TTTTCTAAT TAAGTCATCC ATATAAGGAC	5400
CAAATATACC AACTACTAAA CCAATAATAA AACTTTTAAA ATCCATAATT ACCACCAACA	5460
TGTTGCTGCA TAGGCTACAC CTCCAAGTAT AGCTCCACCC GCAGCACCAG TTGCTGCACC	5520
TTGCCATGTT CCTGTTTTAA TGCCTAGTTG AAGACCTCTT GCTGCTCCTC CTCCAACACC	5580

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TGCTTTGGCA AAATCTCCCC AATTGCATCC GCCACCTTCA ACGCAAGCAA GCATTTTCAGT	5640
ATCCATAACA GAAAATTGTG ACATCATTTT TGTATCCATG ACAAATACTC CTTTTTTAAA	5700
AAACTAAAAT AAATCAGAAT AGAATCCTCA TAATTTTACT ATAAGTCTTA CCAACTTAGT	5760
CCCAATTTAT CACCAACCAT ACCTCCTAAG CATGTTAATC CACCCCCAAT TGCACCAATG	5820
TGTGCTCCAA CAAATGCACC AGCAAGTCCA GCTACTCCTA AAGTGGCCAA ACCTGCTCCA	5880
GTTCACCAG TTATAATTCC CGTAGTGACT CCTGTAATCA GTGCATTTTG ACAATCAGTG	5940
GAGCTATACC CCCCTTCAAC TTTGCAAGC ATTTTCAGTAT CCATAACCTC TAACTGTGAC	6000
AACATTTTGT TATTCATGAT GAATACCTCC TTTTATTTT CAATTTGTTA CCAAAGCTT	6060
AAATTCATA AACAAATAGA TTTTTATAG TATCTTTTGT ATTTTCTTAA AAAAGTATAT	6120
ACGTCTACTA TCTTCTTAA GGTAGCAGTA CCTATTTTGT AGTCTAAGAT TTCAATAATC	6180
TTGAGTATCT AAAATATCTT AATTTCGTTA TTCTCCTTGC AATAAAAAGT TTTACTATAC	6240
TATTTATTAA CTTGCAGAAA GCAAAAAATA TTAGTAAATA ATAGTTTATA GTTAAGTTTT	6300
TTATTCCTAC CAATCCATCA ACTAAGTAAA GCATCAACGA TTACATAAAC GATTGATAAT	6360
ATAATTAATA TTTTGCTAAC TATCTTATTC TCATCATCTT TAGATAACTT TGATATTTTG	6420
TAAGTAAGTA AATAAGACAG TAAATTAATA GCGATAATAA TACTATATTT AAGAATCATA	6480
ATCTTACAAA GAGGACATAA TTCCTGAACC TACACAAATA AGTGTGCTG CTCCCCAGT	6540
TATCGGACCA GTCGAGCAG CTAATAGTAC TGCTCCAATA CAACCACCGA TTGCAGATCC	6600
TAAATTGCCT CTTCTCCAC TAACTATTTT GAGTCTTCA TTATCCATAA CAGAAAATTG	6660
TTCCATCATT TTTGTATTCA TGACAAATAC TCCTTTTTC TTTTTTATT TTTGTCTGT	6720
TGTAACTTTG ATAAGTTTAG TATATCATCG TTTTTTAAAA TTTTTCATCC AGATCTTGAA	6780
TTGTCATCGA AACGTCTTGA ATTAGCTTTT TTATTTCAAG CCACCTCTAA ATGTTTAAAA	6840
AAAATAATTT CTAATCATT TTTTACCATT CAGGAAGTTT TAATGACTAT TCAAGATTTT	6900
ATAAAATATG AACTTAGTTT TATGACATAA TAGACCTATC CACTATATGA AAGGAATTGC	6960
CAATGACTTC TTATAAACGT ACATTTGTTC CTCAAATAGA TGCGAGAGAC TGTGGTGTG	7020
CTGCCATTAG CTCGATTGCT AAATCTATG GTTCAGATTT TTCTCTAGCT CACTTGAGAG	7080
AACTTGCAA GACCAATAAA GAAGGGACGA CTGCTCTTGG CATTGTAAAA GCCGCTGATG	7140
AAATGGGCTT TGAAACAAGA CCTGTTCAAG CAGATAAAAC GCTCTTGTAC ATGAGTGATG	7200
TCCCCTATCC ATTTATCGTT CACGTTAACA AAGAAGGAAA ACTCCAACAT TACTATGTTG	7260
TCTATCAAAC AAAGAAAGAC TATCTGATTA TTGGTGATCC TGACCCTTCT GTAAAAATCA	7320
CTAAATATG AAAAGAACGC TTTTCTATG AATGGACTGG AGTAGCTATT TTTCTAGCTA	7380

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CCAAACCCAG CTATCAACCC CATAAAGATA AAAAGAATGG TCTACTAAGC AAGCTTCCTT	7440
CCTCTGATTT TCAAACAAAA ATCTCTCATT GCTTACATTG TTCTCTCAAG CTTATTGGTC	7500
ACTATTATCA ATATAGGTGG TTCTTACTAT CTCGAAGGAA TCTTGGATGA ATACATTCCA	7560
AATCAGATGA AATCAACTTT AGGAATCATC TCAGTTGGTC TGGTTATCAC CTATATCCTC	7620
CAACAAGTCA TGAGCTTCTC CAGAGATTAT CTCCTAACCG TTCTGAGTCA GAGATTAACT	7680
ATTGATGTGA TTTTATCCTA TATTCGCCAT ATTTTGAAC TTCCCATGTC TTTCTTTGCG	7740
ACACGTCGTA CAGGAGAAAT CATTTCACGA TTCACAGATG CTAACCTAT TATAGATGCC	7800
TTGGCTTCTA CCATTCTTTC TCTTTTCTG GATGTTTCTA TTCTGATTCT TGTAGGAGGC	7860
GTCTTACTGG CACAAAACCC TAATCTCTTC CTCTTTCTC TTATTTCAT TCCTATATAC	7920
ATGTTTCATCA TCTTTTCTTT TATGAAACCT TTCGAAAAA TGAACCATGA TGTCATGCAA	7980
AGTAATTCTA TGGTTAGCTC TGCCATTATC GAAGATATCA ACGGGATTGA AACTATAAAG	8040
TCGCTCACGA GTGAAGAAAA TCCTATCAA AATATAGACA GCGAATTTGT AGATTATTTG	8100
GAAAAATCCT TTAAGCTCAG TAAATATTCT ATTTTACAAA CGAGTTTAAA GCAGGGAACA	8160
AAATTAGTTC TGAATATCCT TATCCTATGG TTTGGCGCTC AATTAGTCAT GTCAAGTAAA	8220
ATTTCTATCG GTCAGCTGAT TACCTTTAAC ACACTTTTTT CTTACTTTAC AACTCCTATG	8280
GAAAAATATTA TCAACCTCCA AACCAACTC CAATCTGCGA AGGTCGCTAA TAACCGTTTG	8340
AACGAAGTCT ATCTAGTCGA ATCTGAATTT CAAGTTCAAG AAAACCCGT TCATTACAT	8400
TTTTTGATGG GCGATATTGA ATTTGATGAC CTTTCTTATA AGTATGGTTT TGGATGAGAT	8460
ACCTTAACAG ATATTAATCT CACGATTAAA CAAGGAGATA AGGTTAGCCT AGTTGGAGTT	8520
AGTGGTTCTG GTAAAACAAC TTTAGCCAAA ATGATTGTCA ATTTCTTTGA ACCCTACAAA	8580
GGGCATATTT CCATCAATCA TCAGGATATT AAAACATTG ATAAAAAAGT CTTGCGCCGT	8640
CATATTAATT ACCTACCCCA ACAAGCCTAT ATCTTTAATG GCTCTATTTT GGAAAACTTA	8700
ACCTTGGGCG GTAATCATAT GATTAGTCAA GAAGATATTC TAAAAGCTTG TGAAGTAGCT	8760
GAAATCCGTC AAGACATTGA AAGAATGCCT ATGGGCTATC AAACCTCAGCT CTCTGATGGA	8820
GCTGGTCTAT CAGGAGGACA GAAGCAACGA ATCGCTCTCG CTCGTGCTCT TTAACTAAA	8880
TCTCCTGTTT TAATACTAGA TGAAGCTACT AGCGGTCTTG ATGTCTTGAC TGAGAAAAAG	8940
GTTATAGATA ATCTTATGTC TCTAACTGAT AAAACCATTC TCTTTGTAGC CCATCGTCTC	9000
AGTATAGCCG AACGAACCAA CCGTGTCATT GTTCTTGACC AGGGGAAAAT CATTGAAGTT	9060
GGTA	9064

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(2) INFORMATION FOR SEQ ID NO: 18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7780 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

CTCCATTTTT TTGATTTTCAT AAATAACAA CCTCTCTGTT AATTTTGTAT AATTATAACG	60
ATATCCAAGT TACTTGTCAG GTGTTTTTTA AATTTTATC TCAAAAATAT TTTTTCGTTC	120
AAAAAAGGA GCCATCAGTT GATTTCAAGC TCCCTTTTAT ACAGAATTAA ACTATTTTAT	180
AGTTCGACAA TCTTACCTGT TTCAAAGTAG ACAACCCATT CACAGATATT TTTAGCATAG	240
TCACCGATAC GCTCCAAGTA GGAAATAACT TGGAAATAAT CACGACCCGT AACAAATGGCT	300
TCTGGATTTT TCTTAATCTC TTCAGTCGCA AGGTCACGGA TAGTTTCAAA ATAGTGGTTA	360
ATTTGCTCAT CCATGGAGGC CACCCGGTAT GCGTCGTCAA CAGAACCATT AAGATAAAGA	420
TCAAGTGCTG CTTCACAAC GCTTTTAACT TCACGTCCCA TTTTTTAAAT TTCTTCCTCT	480
ACAGCTGGAA TGCCTCTTC CCCCTTCATA CGGATGGTTG CCTGGGCAAT GGCTACAGCG	540
TGATCCCCCA TACGCTCCAC ATCTGATACA GCCTTAAGGA CAGTCAAGAC TGACGCAAA	600
TCTTGAGAGA CTGGTTGTTG GAGTGGCATC ATTTCAAATG ATTTCTTTTC CAGTTTCACT	660
TCGTATTCAT TTAATCTGTC ATCATCTTCG ATGACCTCTT TTGCCAGGTC ACGGTCATGC	720
GTGACAAAAG CACGTACCGT ACGATTGATT TGTGAGAGCA CTTCTTGTCC CATAGCGTAG	780
AACTGGTTAT GTAATTTCTC TAAATCTTCT TCAAATTGAG ATCGTAACAT CTTTCATCTC	840
CTTATCCAAA TTTTCCTGTA ATATAGTCTT CCGTTTCCTT GTGTTGGGGA TCAAGGAACA	900
TCTGCTTGGT ATCATTAAT TCAATCAAAT CTCCATCTAG GAAAAATCCT GTCTTATCAG	960
AGATACGTGA AGCTTGCTGC ATGGAACGGG TTACCAGAAG CATGGGTGAC TTGTCTTTTA	1020
GACCATACAA GGTTCCTCA ATTTTACCAG CTGAAATCGG ATCCAAAGCC GAAGTTGGCT	1080
CATCCAAGAG GATGATTTTA GGAAGTAGTT CCAAGACACG GGCCACGCAG ACACGCTGCT	1140
GTTGACCACC TGACAATCCA ATAGCTGAAT CATATAGACG ATCCTTGACC TCATCCAGA	1200
TAGAGGCACC TTGCAAGGCT TTTTCTACGG CTTTCATCCAG AACCTGCTTA TCCTTAATTC	1260
CATTGATACG AAGCCCGTAG ACAACATTCT CATAGATAGT CATAGGGAAA GGATTAGGTT	1320
GTTGGAAAAC CATTCCGATT TCCTTACGTA ATTCAACCGT ATCTGTACGC GGAAGTGTAGA	1380
TGTTGTGACC ATTGTACACC ACGGATCCAG TTGTGGTCAC CTCTGGATTG AGATCTCCCA	1440

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TGCGGTTGAG AGACTTGAGG AGGGTTGACT TCCCTGATCC AGATGGACCA ATCAAGGCTG	1500
TAATTTCCCTT AGGTTGGAAA GATAGGGAAA CACTATTCAA AGCCTTCTTT TTATTATAAT	1560
AAACGGACAG GTCTGATACC TGTAAAATCG CATCTGTCAT ACGGTTTCCT TTCTAACCAA	1620
AGTGACCAGA TACATAGTCA TTGGTGGACT GTAGCTTGGC ATTTTGGAAA ATAGTTGCAG	1680
TCTTGTCTATA CTCAATCAAA TCACCCAAGT AAAAGAAGCC TGTATAGTCA CTTGCACGAG	1740
CAGCCTGCTG CATATTATGC GTTACAATGA TGATGGTAAA GTTTTCTCTG AGCTCAAACA	1800
TGGTCTCTTC TAGTTGCATG GTCGCAATCG GATCCAAGGC TGAGGCTGGC TCATCCATTA	1860
AGAGGATATC TGGCTTAACA GAGATGGCAC GAGCGATACA GAGACGTTGT TGCTGACCAC	1920
CTGATAAGGT CAAGGCTGAC TTGTGGAGAT CGTCTTTAAC CTGATCCCAG AGGGCAGCCT	1980
GACGAAGGGA GGTTCCTACG ATTTCACTTA GGACTTGCTT ATCCTTAACT CCAGCACGTT	2040
CATGCGCAAA GGTAATATTA CGGTAAATTG ACTTAGCAAA TGGATTGGGA CGTTGAAAAA	2100
CCATTCCAAT GTGTTTACGC ATTTCAATAA CGTTGATTTT TGGACGGTTG ACATCAATTC	2160
CACGATAGAG AATCTGCCCA GTTACTTTAG CAATATCAAT AGTATCATTC ATGCGATTGA	2220
GACTGCGTAA GTAGGTAGAT TTCCCCGATC CCGACGGGCC AATCAAAGCT GTAATTTTAT	2280
TTCTTTCAAA TTGCATATCA ATCCCCTTAA TGGATTCAAT TTTACCATAG TAAACATGGA	2340
CATCCTTAGT AGAAAGGGCT ACTTTTCTTT CAGGAAAGGT AAGGATATGC TTCTCATCCC	2400
AGTTATATGT TGACATGGCT TCTCCTTTAG GCAGCGGTTA ATTTCTTGTTG TAGATAGCTT	2460
CCGAACCTAC GAGCTCCAAA GTTAAAAATC AGGATAAAGA TCAGGAGCAC AGCGGCAGAA	2520
CCTGCTGATA CAATGGTTCC ATCTGGAATA GTGCCTTCAC TATTGACTTT CCAGATATGG	2580
ACAGCCAAGG TTTCTGCTTG ACGGAAGATA GAGATGGGGC TAGTCACACT GAGGATATTC	2640
CAGTTAGACC AGTCAAGAGC TGGCGCCGAT TGCCCTGCTG TATAGATCAG AGCTGCAGCT	2700
TCGCCAAAAG TACGACCAGA TGCCAAGACG ACACCCGTTA CAATACCTGG AAGCGCTTCC	2760
GGAATAACAA CATGAACCAC TGTCTCCCAG CGAGAAATCC CAAGAGCCAG ACCAGCCTCA	2820
CGTTGGGTAT GGTGAACGTG TTTCAAATA TCCTCTACAT TACGCGTCAT CTGAGGCAAG	2880
TTAAAGACTG TCAAGGCCAA GGCACCTGAA ATGATTGAAA ATCCATACTC AAAGTGGACT	2940
ACAAAGATCA AGTAACCAA GAGACCCACC ACCACTGATG GTAAAGAGGA CAAAATTTCA	3000
ATACAAGTCC GCACAAAGTT GGTAACAGGA CCTTTTCTAG CATATTTCAGC CAAGTAAATC	3060
CCAGCTCCCA TAGAAAGAGG TACAGAAATA ATCAAGGTAA TGACCAATAG GAAAAAGGAA	3120
TTGTAAAGCT GAATGCCAAT CCCACCACCT GCTTGAAAAG CAGAAGACCT TCCAGTCAAG	3180

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AAAGACCAAG AGATATGGGG CAAGCCCCGA ACCAAGATAT AGAGAATCAA GGAAGCCAAG	3240
ATTGTCACAA TGATGCTAGC AATCGTATAG AGGACAGCTG TTGCAAGTTT ATCTAATTTT	3300
TTAGCGCGCA TAATTTTCTT TCTCTCTTTC TTTCGTAATC AATTTAATCA CACTGTTAAA	3360
AACTAAGCTC ATCAAGAGCA GTACCAAGGC CAGTGACCAG AGAACATTAT TATTTACAGT	3420
TCCCATGACA GTGTTCCCAA TTCCCATAGT TAATATAGAA GTTAAAGTTG CAGCTGGTGT	3480
GGTCAAGGAA GTTGGGATAA CAGCTGAGTT TCCGACAACC ATCTGGATAG CTAGAGCCTC	3540
ACCAAAGGCA CGCGCCATCC CAAAGACCAC TGCAGTGAAA ATACCAGAAC GGGCCGCCTT	3600
CAAGATCACA CGCCAGATAG TCTGCCAGCG AGTGGCTCCC ATAGCGAAAC TGGCTTCACG	3660
ATAATAACGA GGAACCGCAC GCAAGCTATC CGTTGTCATA AAGGTTACGG TCGGCAAAAT	3720
CATGACAAAG AGGACGGAAA TCCCTGACAA AATCCCAAAA CCAGTCCCAC CAAAGACACT	3780
GCGAACAAAG GGAACGACGA CTTGCAAGCC AATAAATCCG TACACTACTG AAGGAATCCC	3840
AACCAGGAGT TCAATAGCTG GTTGCAAAAT CTTGCCCCCT TTTGGTGATA CTTGCGTCAT	3900
AAAACTGCT GCACCAATAG CAAAGGTGT TGCATAAGG GCTGAGAGAA TGTAACGAT	3960
AAAGGAACCC AAAATCATAG GAAGGGCACC AAATCTTTA CTAGAAGGAT TCCAAGTCC	4020
TCCCAAAAGA AAGTCAAAGA TATTCACACC ATTGACAAAG AAGGTCGACA AGCCTTTTTG	4080
CGCTACGAAA ACCAAAATCA TGGCCACAAG GATGACTATC AAAGAAAGAC AGGCAAAGGT	4140
CAAACCTTTT CCTAATTCTT CCAGACGAGA ATTCTTTGAT GGAAGCAACA TTTTCTTAGC	4200
TAATCTTCTT TGATTCATTA TTGTCTCCCT TCCAACACTG TCACAGTTCC GGCAGCATCT	4260
TTTTCAACCT TCATTTCTTT AATCGGAATA TACTTCAATC CTTTGACAAT CCCTTCTTGG	4320
GTCTCATCCG AGAGAACAAA ATTGAGAAAT TCTGCAGCCA ACTCATTTGG CTGCCCCAAT	4380
GTATACATAT GCTCATAAGA CCACAAGGGC CAATTATTGC TACTTATATT TTCTGGACTT	4440
AAGTCATAGC CATTCAACTT CATGCTTTTG ACCGAATCAT CTATATAGGT AAGAGATAAA	4500
TAAGAGATAG CTCCTGGACT TTTTGATACG ATTGATTTTA CCGCTCCATT TGAATCCTGC	4560
TCCTGACTTT GCATGGCAGA CTGACCTTCC ATAATGACAG TATCAAAGGT AGCACGAGAG	4620
CCAGAGCCGG CTGCCGATT GATAACAGAG ATGGGTAAGT CCTTACCACC AACCTCTTTC	4680
CAATTGGTTA CCTCACCTAT GAAGATTTGA CGAAGTTGCT CTGTCGTTAG GTTATCAACA	4740
TCAACCTCCT TATTGACAAT CAGAGCCAAG CCAGCTACCG CGACCTTGTG GTCAACAAGA	4800
GCAGAAGCAT CAATTCCGTC TTTTTCCTCA GCAAATACAT CTGAGTTTCC TATATCAACT	4860
GCCCCAGACT GAACCTGGGA CAAGCCTGTA CCAGAACCTC CCCCTTGGAC ATTGACCGTT	4920
TTTCCAACAT GGATCGTGCC AAATTCATCT GCCGCTACTT CAACCAAGGG TTGCAAGGCA	4980

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GTTGAGCCAA CAGCCGTTAT GGATTCTCCA CGATCAATCC AGCTAGCACA GCCTACTAAA	5040
CAAGCCGTCA GCCAAAAAGC GATAAGAGAC AGAGCAAGCT TTTTCTTTT TTCTACTGTT	5100
TTTCTCCTCG AAAATAATTA TGAATACTGT GAATTTTSTA AGTAGTCTT TATGAGTTGA	5160
CGCATGAATT CTTACCAAAT TTCTGCGCAA TTGATTATTT ATATAATATA GGCTATATTA	5220
CTCTTTCTTA ACCTCCTTTT TTCATATGTG GATAAAATCT CTGTCTATC CCTTCCCCA	5280
TTGTACCCA TTATAGTCAT TTCGTGTCTC TTTTCCCT TTTAATGCA AGGGAAATTA	5340
CTCTCCTTAG ATGATAATCC AAAAGCTAGA AAGGTATCTC AAACCTCTCT ACTCTCCAG	5400
ACTAGTTTAC AACTAAAAGG AAAAGATTCT ATTTTATGAG AAATCTAGTT TACAAGCGGT	5460
AAGAACGCTA ATAATAAAC TTCTGTACT CTTGAAAAT CTCTCAAAC CAGTGTTTG	5520
AGCTATCTAT GGCTAGCTTC CTAGTTTGCT CTTTGAATTT CATTGAGTAG TAAAACTACA	5580
TGTAATGGCA ATCAAGATAT CAAGAATCAT CCTACTAAAA AAATCCATAC TTCTACTATA	5640
ACATAGAATA AGATATTTGA CTAGCATTTT CATTTGAATC TGAGGCCTT TGAAAAATA	5700
TTTTTCAAAA CATTTCCAGT AACCTTTGCA AAGCCCAAGC CATTGCCTTT AACCAAAAC	5760
TGGTACCAAC CATTTGGCAG ACTTCTGCC AGCTGAACGG TTTCTCCAGC CGCATACTTG	5820
ACAAACGCTT CTTGGCCAAT TTCAACCGAC TGTTGACCT GACTCGGTTT CAAGGCTAAA	5880
CCAAGAGCGA AACTGGGCTC AAAGCGTTT TCTTAAAAG TACCCAGATG CAGTCCATTG	5940
CGAGCAATCT TGAGCTTCCA TAAATCTGGC AAAAGTCTG GCAAGAGATA AAGCTGGTCT	6000
CCAAAAATCT GCAAGATACC CGGTAGATTG ACCTTCAAAT GGTTTGGGC AAATCCTGC	6060
CACAAGGCAA CTTGTTACG GCTGAGGTTA CTCTTACTTG CTTAAATTT AGGAGCTGGA	6120
TTGTTACCCT TAAACTGTAG ATGGGCAACA AACTGACCCT CTCCCTTAA CTGATGAGGA	6180
TACATCCGAG CCGTTTCTGG CAGGTCAATA CCAGCTACCA TTCCATTGAT ATGCTCTACT	6240
GGCAACAAGT CAAAATCATA CTCTCCAGC AACCAATTGA CAATCTCTC GTTTCTCTG	6300
GGTGCCAGG TACAGGTCGA ATAAACCAGA TGACCACCTT CAGCTAACAT GGTCAGTGA	6360
TCCTCCAGAA TTTCTCTTG CAAGCTAGCA CATTGACTCG GATAATCTAA GCTCCAATAG	6420
TCCATAGCAT CAGGTGCTT ACGAAACATT CCTTCACCAG AGCAAGGGG ATCAAGAAGC	6480
ATTAAGTCAA AATAGCCTTT AAAGACCTTG ACCAAGCGGT CGGCAGATTC ATTGGTCACC	6540
ACGACATTTG TCGCTCCAAA ACGCTCCATG TTTTCAACCA AAATCTTAGC CCGTTTGCTT	6600
GAAATTTTAT TGGAATCAAG TAGCCCCTCC CCGCTAGAT AGGCTGCCAG TTGAGTTGAT	6660
TTGCCCCCG GTGCAGCAGC CAAGTCCAAG ACCTTCATAC CAGGACTGGG TTGGGCTACT	6720

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TGAGCCACCA TTTGAGCAGC AGGTTCTTGC GAATAAACTA AACCTGTAGC ATGCTCAGGC	6780
GATTTCCCTG AAACCTTCCC ATAGTGGCCC CAAGGGGTTT GAGTAATGGC ATCAGAAAAG	6840
GAAAGTTGCT CTTCTTTTAA GGGATTGACC CGAAAGGCCG AAACCGCTTC CTCCTCAAAA	6900
GAGGCAAGAA AATCTCTTGC CTCATCTCCT AGTATCTCTT TATATTTTTC AACAAATCCT	6960
TCTGGAAATT GCATTTAAGT TCTTTTCCTT TCGTAAATAT AGGACTGAAT TTCCTCCTGC	7020
ATCTCAAGAG GCACCATCAT GACCGGCTGT CTGGTTTGAA AATCAGGAGC TTCACCAAAA	7080
AGGGTCACAA CCCGATAGCC CAGACTTTC CCTAAATAC TAGCTGCGGC ATAATCCCAT	7140
GGTTGCAGAT AAGTGAGATA GGTCAACAAA CGCCCTGACA AAATCTTGGC AAAACTAATG	7200
GCCGCACTTC CATAGACACG AACACCAAGA ACCGCTCGGC TCAAATCAGC CAGCCCCCAT	7260
TCATTGGTTT CCAGCATACC ACTATTCCTT GCAATGAGAA AATCTCCAAG TGGTTTAGTT	7320
TTAAAAGGAG CTAGGGACCT ATCATTTAGA CAAACTGGAA ATTCCCCACC ACCGTGGTAA	7380
CAATCCCCTT TGACCACATC ATAAATCAGA CCAAAGTGC CCTGACCATT TTCAAATAA	7440
GCCATCATAA CAGCAAAATC TTCCTGCTGG GCTACAAAAT TATTGGTACC ATCAATGGGA	7500
TCAATGACCC AAACCTTGCC CTCTGAACC GAGGCTCGCA GACAACCTTC TTCAGCACAA	7560
ATCTTATCCT CAGGATAACG GGACAAAATC TCACCAACCA AGAGTTCCTG AACTTCTTTG	7620
TCCAGTCTGG TCACCAAATC TGTGAGAG GACTTGGTTT CAACACGCAA GTCTTCCTGC	7680
ATATGGTCAA GAATGTACTG ACCTGCTTTC TTAACAAGCT CTTTAGCAA TTCAAATTTA	7740
CTTTCCAAGA GAAATCTTTC CTTCCCCTT TCTTTGGGG	7780

(2) INFORMATION FOR SEQ ID NO: 19:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 4820 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:

GTAATGATAT AGGAACACCA GGTGACCTGA TGGGACGTCG TAAGCCTATG AACTACTAGC	60
TGCTAAAGGC TTTAAAGATG GTATGGTACC ATATATCTCA AACCAATACG AAGAAGAAGC	120
CAAACAAAAG GGCAAGACAA TCAATCTCTA CGGTAAAACA AGAGGTTTGG TTACAGATGA	180
CTTGTTTTTG GAAAAGGTAT TTAATAACCA ATATCATACT TGGAGTGAGT TTAAGAAAGC	240
TATGTATCAA GAACGACAAG ATCAGTTTGA TAGATTGAAC AAAGTTACTT TTAATGATAC	300
AACACAGCCT TGGCAAACAT TTGCCAAGAA AACTACAAGC AGTGTAGATG AATTACAGAA	360

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ATTAATGGAC GTTGCTGTTT	GTAAGGATGC AGAACACAAT	TACTACCATT GGAATAACTA	420
CAATCCAGAC ATAGATAGTG	AAGTCCACAA GCTCAAGAGA	GCAATCTTTA AAGCCTATCT	480
TGACCAAAACA AATGATTTTA	GAAGTTCAAT TTTTGAGAAT	AAAAAATAGT GTCTACTATT	540
AGGAAATAAA GTTTAAAAAG	GTGATGAAGA ACAAACCAAG	ATTCAAGCAG GAATTCCTAC	600
TGATAATGAA GTAAGTTATG	ATCTTATTTA TCAGCAGGAA	ACTCTTCCTG CAACAGGTTC	660
ATCAACTTCT GAGCTTACAG	CTTTAGGCCT ATTAGCTGTT	GGTAGTTTAG TTCTTTTGGT	720
TCATAATATG ACGGGAACAG	TTTTTTGCTC CCTCTGAAAA	GTCATCATTT GATGGCTTTT	780
TTCTATATAG GGTAAAAGAT	AGGGTAAAAG GCTATCATCG	GACAAAATAA AGAAGGCATG	840
ATATAATATA AAGTAGATTT	CTATGTCATA AAACAAGAAC	TGTTTGGACA TCATTCAATTT	900
GAAAACTCTC TATGTTCAAA	CAATAGTAAA ATAAAATAGG	GGATCTAAAT CCTTGCTATG	960
AAAGGAAAAA ACTCAATGGC	TACTATTCAA TGGTTTCCTG	GTCACATGTC TAAAGCTCGT	1020
CGACAGGTGC AGGAGAATTT	AAAATTTGTT GATTTTGTGA	CGATTTTAGT AGATGCACGC	1080
TTGCCTCTAT CTAGTCAAAA	TCCTATGTTG ACCAAGATTG	TGCGTGATAA ACCAAAACTC	1140
TTGATTTTAA ACAAGGCCGA	CTTGGCTGAT CCAGCAATGA	CCAAGGAATG GCGTCAGTAT	1200
TTTGAATCAC AAGGAATCCA	GACGCTAGCT ATCAACTCCA	AAGAGCAAGT GACTGTAAAA	1260
GTTGTAACAG ATGCGGCCAA	GAAGCTCATG GCTGATAAGA	TTGCTCGCCA GAAAGAACGT	1320
GGGATTCAGA TTGAAACCTT	GCGTACTATG ATTATCGGGA	TTCCAAACGC TGGTAAATCA	1380
ACTCTGATGA ACCGTTTGGC	TGGTAAAAAG ATTGCTGTTG	TTGGAAACAA GCCAGGGGTC	1440
ACAAAAGGTC AACAATGGCT	TAAAACCAAT AAAGACCTGG	AAATCTTGGA TACACCGGGG	1500
ATTCTCTGGC CTAAGTTTGA	GGATGAAACT GTTGCACTTA	AGTTGGCATT GACTGGAGCT	1560
ATCAAAGACC AGTTGCTTCC	TATGGATGAG GTTACCATTT	TTGGTATCAA TTATTTCAAA	1620
GAACATTATC CAGAAAAGCT	GGCTGAACGC TTCAAACAAA	TGAAAATTGA AGAAGAAGCG	1680
CCTGTGATTA TTATGGATAT	GACCCGCGCC CTCGGTTTCC	GTGATGACTA TGACCGTTTT	1740
TACAGTCTCT TCGTGAAGGA	AGTCCGTGAT GGCAAACTCG	GTAACATATC CTTAGATACA	1800
TTGGAAGACC TCGATGGCAA	CGATTAAAGA AATCAAAGAA	TTCTTGTGA CAGTCAAGGA	1860
GTTAGAAAGC CCTATTTTTT	TAGAGCTTGA AAAGGATAAT	CGCTCAGGAG TTCAAAGGA	1920
AATCAGCAAG CGTAAAAGAG	CCATTCAAGC TGAATTAGAT	GAAAATTTGC GCTTGAATC	1980
CATGCTTTCT TATGAAAAG	AACTTTATAA GCAAGGATTG	ACCTTAATTG CAGGTATTGA	2040
TGAGGTTGGT CGTGGTCCTC	TTGCTGGTCC TGTAGTCGCT	GCGGCCGTTA TTTTATCTAA	2100

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AAATTGTAAG ATTAAAGGTC TCAACGACAG CAAGAAAATT CCTAAAAAGA AACATCTGGA	2160
GATTTTCCAA GCCGTTCAAG ACCAAGCCTT GTCGATTGGA ATTGGTATCA TAGATAATCA	2220
GGTCATCGAC CAAGTCAACA TCTATGAAGC AACCAAATA GCCATGCAAG AAGCAATCTC	2280
CCAGCTCAGC CCTCAACCAG AGCACCTTTT GATTGATGCC ATGAAACTGG ACTTGCCCAT	2340
TTCACAAACC TCCATTATCA AAGGAGATGC CAACTCCCTC TCTATCGCAG CAGCATCTAT	2400
AGTAGCCAAG GTAACACGTG ATGAATTGCT GAAAGAATAC GATCAGCAGT TCCCTGGCTA	2460
TGATTTTCGCT ACTAATGCAG GATATGGCAC AGCTAAACAT CTGGAAGGCC TCACAAAAC	2520
AGGAGTTACC CCAATTCACC GAACCAGCTT TGAACCCGTT AAATCACTGG TTTTAGGTAA	2580
AAAAGAAAGT TAATTGAAAG GAAATAACAT GGAGGAACAG TCGGAAATAG TCCGTTCTAA	2640
GAAAGAATTC GCCTTTGCAT CCAGCACTAT ACTATCCCAA GTTGGTCGAG GAATCATTGT	2700
CGGCCTCATC GTTGAATTA TCGTCGGATC CTTTCGTTTC TTAATTGAAA AGGGCTTCCA	2760
CCTGATACAA GGAGTTTATC AAGATCAAGG GTACTTAGTG CGCAATCTTT TTGTACTGGT	2820
TTTGTMTTAT ATACTCATCT GTTGGCTCAG TGCCAAATA ACACGGTCAG AAAAAGATAT	2880
TAAAGGCTCA GGAATTCCTC AAGTCGAAGC CGAACTGAAA GGCCTCATGT CCCTCAACTG	2940
GTGGGGCATT CTTTGAAAAA AATATGTGCT AGGTATTCTT GCTATTGCCA GTGGACTCAT	3000
GCTGGGTCGA GAGGGACCCA GCATTCAACT TGGAGCAGTT GGTGGTAAAG GAATTGCCAA	3060
GTGGCTCAAA TCCAGTCCAG TAGAGGAACG TTCCTTGATT GCCAGTGGAG CTGCAGCAGG	3120
TTTAGCCGCA GCCTTTAATG CTCCTATTGC AGCACTTCTC TTTGTTGTAG AAGAAGTCTA	3180
TCACCATTTT TCGCGCTTTT TCTGGGTCTC AACTCTAGCA GCCAGCATCG TAGCAAACCT	3240
TGTGTCTCTA CTCATGTTTC GTTTGACACC AGTATTGGAT ATGCCAGATA ACATTCCTCC	3300
CATGACCCTA GATCAGTATT GGATATATCT CGTCATGGGA ATTTTCCTTG GATTTTCAGG	3360
TTTCTCTAT GAGAAAGCTG TATTAAACGT TGGAAGAGTT TATGACTTGA TTGGTCAAAA	3420
AATCCATTTC GATAGGGCTT ATTATCCCAT CTTGGCTTTT ATCCTTATCA TACCAGTCGG	3480
AATCTTCTTA CCTCAAATCA TTGGTGGCGG AAATCAGCTT GTCCTTTCTT TAACTGAACA	3540
AAATTTTAGT TTCCAAGTTT TATTAGCTTA CTTTTTAATC CGCTTTATTT GGAGTATGAT	3600
TAGCTATGGA AGTGGACTGC CAGGAGGAAT TTTCTCCCC ATTTTAGCTC TTGGTTCTTT	3660
GCTTGGTGCC TTAGTTGGTG TTATCTGTGT CAATCTTGA CTGTTCAGTC AAGAGCAATT	3720
CCCTATATTT GTCATTCTAG GAATGAGTGG CTATTTTGA GCCATATCAA AAGCTCCCTT	3780
AACCGCTATG ATCCTCGTAA CTGAGATGGT AGGAGATATT CGCAACCTTA TGCCACTTGG	3840
TCTTGTCACT CTTGTTCTT ATATTATCAT GGATTTGCTC AAAGGTACGC CAGTCTATGA	3900

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AGCCATGCTG GAAAAAATGC TTCCAGAAGA AGTATCTAGC GAAGGAGAAG TTACACTTAT	3960
CGAAATACCA GTTCTGATA AAATTGCTGG GAAACAAGTT CATGAACTCA ACTTACCACA	4020
CAACGTCCTC ATCACAACTC AAGTCCATAA TGGCAAGAGC CAAACAGTTA ACGGCTCAAC	4080
CAGAATGTAT CTGGGTGATA TGATTACCT GGTATTCCA AAAAGTGAAA TTGGAAAAGT	4140
CAAAGATTG TTGTTGAGT ATGAGTATTT ACATAATTTA TGTATGTAA ATGATCAGTT	4200
TGATTTATTT AGAAAACCGA TTCTCAGGAA TGAGATCGGT TATTTTTTAC TGATGAGGAA	4260
TTTACATAT AAATAATTGA ACTTTATTAA AAATAAGACT ATAATTAAGT TAGAAATGAT	4320
AAAGTATAAA GCTAGAAAGG AGTTTACTGT ATCAAATCTG TACAGTAAGA TTTAAATCAT	4380
GAAAAAGAAA ACAATAGCAA TTATATAGAG AAATGAAATA GAAATAGGAT AAAACAATCA	4440
GGACAATCAA ATCAATTTCT AGCAATGTTT TAGAAGTCCA GATGTACTAT TCTAGTTTCA	4500
ATCTATTATA CAATGTGTTT TGTATCTCAT AGCTCCTTAT ATAGCTCTTC AGTTATGTAG	4560
TATTAACAGA AGTTTAGTGG GTGAGATTTT TATTATTTTC CTTATTCTGT TTTGTTTGTA	4620
GGTCTAAGTC TTTTATCAC TTTGAAAAAC TCCTATAACA TCTTCCGAA AAACATAAT	4680
TTTCTTGAAA AATATACAAG TCTATGCTAT ACTACTAGTA TACTTACTTA TGGAGAAAAT	4740
ACATGAAACG TGAGATTTTA CTGGAACGAA TCGACAACT AAAACAACCTC ATGCCCTGGT	4800
AAGTTCTGGA ATACTACCAA	4820

(2) INFORMATION FOR SEQ ID NO: 20:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 21338 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:

CTACGACATC ATGATTAACA GTCATGCGCT ACTACCAACT GAGCTATGGC GGATAAAATA	60
GTCCGTACGG GATTCGAACC CGTGTACCG CCGTGAAAAG GCGGTGTCTT AACCCCTTGA	120
CCAACGGACC TTCTATCTGT AGCAGATATA ACCATTATAT CAATTCTTG CTAATTGTCA	180
ATCACTTTTG AGATTTTTTC TCTAAAATAT CTTTAATTT TCTAATTTT AATCTTGAAA	240
TAGGACAACG ATGGTCTTCA TAGAAAACAA TTTCTAAGTT TTTTCGATCA ATTTCTCTGA	300
TATTACCTAT ATTTACCAAA AATGACTTGT GAGGAGAATA AAATCGCTGA GTATGTTTGT	360
CCTTTTCCTG AATATCTGTC ATGGTACCAT AAAACTCTTT TGCAAAATTC TTACCAATAA	420

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TGCGCAATTT ATGAGATACC CCTGTTGTTT CAATATACAA AATATCATGG TAAGGAATTT	480
TTAAATCATT TCCCTTGTA TGTAGTCGA AATAATCTAC AACATCTTCA TTTTCAAGTA	540
ACATACTCTT CGTGTAGAAG ATATTTTGCT CAATTCTCTT CTTAAACATC TCATCATTGA	600
TATCCTTATC AACAAAATCT AGGGCTGATA CCTGGTATTT ATAGGTTAGA GTCGCAAACT	660
CTGATCGACT AGTGATAAAG ACGATAATAG CGTAAGGATT GTAATGACGA ATGAGCTGAG	720
CCACTTCAAA TCCCTTTTTT TCAATTCCAT GAATATCGAT ATCTAGGAAA TAAAGCTGAT	780
TTACTTCATC ATTTTCAATG TATTCTTCAA ATTCACGGAC TTTTCCCGTT GTCTTGATG	840
ATATTGGAAT ATTCGATTCT TTCGAAATTT CATCCAATAT TCTCTCTAGT CTCACMTGAT	900
GTTCAATAAC ATCTTCTAAA ATTAAACTT TCATTCAAAT TCCCTCTTAA ATCTAATGAT	960
TGTCCTAAAT GTACTGCCTT CCATCTCTGT TTCTAAAATA ATATTGTTGT ACTTATCTAG	1020
TAGTTCTTTC ACATTATTTA ATCCGACTCC GCGATTTCTT CCCTTAGTGG AGAATCCTAA	1080
GGCAAATAGA TCTCCTGAAG GAGTCATCGT CATTTTACAT GAATTCTGAA TCACAATAAC	1140
TGTTTCAGTT TCCATCTTAA TAACTGCTAC TTCCATCTGC TTTTATAGC TATCAGCCGA	1200
TCCTTCGACA GCATTATTCA ATAAACGCT CATGATACGA ACCAAATCCA ATAGTCAAT	1260
TGGAAGCTTG GTAATCGTAT CTTTACTTC CAGTGTAAC TCTACCCAT TATTCGAGC	1320
ATAGACAATT GACTGAGCAA CCAAATTCG TAAAGCTGAG TCTTCTATGT TGTTCAAATC	1380
AAAGTAAGTG TACTTATCTG AACGCAATTT ATGATTTGCT TTGACTAAAA CTTCAATTGTA	1440
AATTCTGTCA ATTTCTGTGA AATTACCACT GTCAATTGCC ATCTGCATGC TGACAAGCAT	1500
TCCAGCATAA TCATGTCGAA AACCACGGAT TTCATTATAC AGACCAACAA TTTTCTCTGT	1560
GTAATTCTGT AAATGTTTCT GTTCAAATTT CTTCTGCTTC AAAGCAATCT CTTTCTCCAT	1620
TTGAACTTTA TGAGAATTCA TTGCAAAGAA GGTCAAAGG AGAGAGATAA AGACAATAGA	1680
TGACAAAATA CTTCCAAAAC TATTCAAATG TTTAATCGTA CTTACCATAT CTGAAACGAA	1740
AGATACAATA TGTAGCAATA GTAAAGCAAA AAATACTTTT TTCAAGAAAG GATAAAGGTA	1800
GTCCTTGTC AATAGGCTA GTTCCAAATG GAAATAGTAA ATGATTTTTA ATGTAACAAA	1860
ATAGGTTAAC ACCGTCACAA CGAAAAAGAA TGGGAAATGA TATTGTAAAA CAAAATTATC	1920
TCCTGTTATA GAGGAGAAAA TTACGGACAG AAAGTTATGA GTGCTCTCAT ATAAAAGAGA	1980
TAGTAGTAAA CTTAGGAATA GTCCTCTATC CCTCTCATAC TGTTCATCC ATCGAAAATA	2040
GGAATATAAG CCCAAAGGAA ATAAAAATCT TTCAATCCCT ATTTTATCTA AATATAGAAG	2100
ATAAAAGGAA AATTCAAGTA CTATTTTCAGT TAGTAATGTA TAAGCACCAA AAACGTATAA	2160
TTCTTTTCTA TTTATTCGAC CTTTACAAAT TAAACGGTAA CTGTGACTAA TAATTAAAAA	2220

ATGAACAATA ACTGTCCCAA ATCCAAGTAA ATCCATTACT CTTTCTCCTT ATTCATTAC	2280
TTTTTTCGTA GGAAAAGAAA ATCAAGGATG ATTCTTGAAA TCCTCATCTC CCCACCTTTA	2340
ATCTTTTGTA AGTCTTTTTC CTTCAAAGCT ACAAAGCTGT CCAATTTAAC TGTGTTTTTC	2400
ATAATAAAAT CTCCTAAAAT GTTTTTTCTT GTAAGCTAAC TTACAAAAAC CATTTATACAA	2460
AATGGAATTT CGTTTTAGAT AAAATTCTCT CAACTGTCAT TTTTCTCTCC CAAAGTGAC	2520
TTTTTTAAGA AAAAAGCCGG GAAAATCCC AGCTTTGCTA TTATATTGAT CCCAGCAGGA	2580
TTCGAACCTG CGACCGTTCG CTTAGAAGGC GAATGCTCTA TCCAGCTGAG CTATGAGACC	2640
TAATACAATT ATTCTACCAA AAATTCAATT AAAAGTCAAT TTTCTATTTA TGGTAGGGGA	2700
ATCCCTGCTG AATCGTAAAA GCGCGATAGA TTTGTTC AACAACTAGT CTCATTAACT	2760
GATGGGGTAA GGTTAGGCGA CCAAACTGA CAGAAAGATT GGCTCTATTT TTTACAGATG	2820
ATGATAATCC TAAACTTCCC CCAATAATAA AAGTAAGAGT AGAAAATCCT TTTATAGAAG	2880
TTTCTTCTAA CTGCTTACTA AATTCTTCTG AGAAGAAAGT TTTCCCTTCA ATGGCTAACA	2940
CAATAACGAA ATCACGGTCA GCAATTTTGT ATAAAATTCT CTGACCTTCT ATTTCTAAAA	3000
TCTTTTGATT TTCTGATTCA CTGGCCTTAT CTGGTGTTTT TTCATCTGAT AACTCAATCA	3060
TTTCAAACTT AGCAAATCTA GAAATTCGTT TTGAATACTC TCGGATACCA TCTTTTAAAT	3120
ACTTTTCTTT CAGTTTCCCA ACTGTTACAA CTTTAATTTT CATGACTCTA TTCTAACATA	3180
TTCTCTATTT TTTCACATCT TATTCACAAA ATAAAAATA GATTTCAATT AAGAAAATCA	3240
CAATTTCAAA AGAGTTATCC ACAGTTTGTG TAAAACTTTT GTGTTTAAGT TATAATTAAG	3300
CTAGTCAGTT TATACTTTCA GTAATTCAAA CATATGGAGG CAAATATGAA ACATCTAAAA	3360
ACATTTTACA AAAAATGGTT TCAATTATTA GTCGTTATCG TCATTAGCTT TTTTAGTGGA	3420
GCCTTGGGTA GTTTTCAAT AACTCAACTA ACTCAAAAAA GTAGTGTAAC CAACTCTAAC	3480
AACAATAGTA CTATTACACA AACTGCCTAT AAGAACGAAA ATTCAACAAC ACAGGCTGTT	3540
AACAAAGTAA AAGATGCTGT TGTTTCTGTT ATTACTTATT CGGCAAACAG ACAAATAGC	3600
GTATTTGGCA ATGATGATAC TGACACAGAT TCTCAGCGAA TCTCTAGTGA AGGATCTGGA	3660
GTTATTTATA AAAAGAATGA TAAAGAAGCT TACATCGTCA CCAACAATCA CGTTATTAAT	3720
GGCGCCAGCA AAGTAGATAT TCGATTGTCA GATGGGACTA AAGTACCTGG AGAAATTGTC	3780
GGAGCTGACA CTTTCTCTGA TATTGCTGTC GTCAAAATCT CTTCAGAAAA AGTGACAACA	3840
GTAGCTGAGT TTGGTGATTC TAGTAAGTTA ACTGTAGGAG AAACTGCTAT TGCCATCGGT	3900
AGCCCCGTAG GTTCTGAATA TGCAAATACT GCACTCAAG GTATCGTATC CAGTCTCAAT	3960

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AGAAATGTAT CCTTAAATC GGAAGATGGA CAAGCTATTT CTACAAAAGC CATCCAAACT	4020
GATACTGCTA TTAACCCAGG TAACTCTGGC GGCCCACTGA TCAATATTCA AGGGCAGGTT	4080
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TGGTATATGG ATTAATCTAC TCGTATCCAT TGTGCCATT T GGAATTCTAT TCTTCTTCCT	18180
ATTCTCTATG ATGGGAAATA TGGGAGGAGG CAATGGCCGT AATCCAATGA GTTTTGGACG	18240
TAGTAAGGCT AAAGCAGCAA ATAAAGAAGA TATTAAAGTA AGATTTTCAG ATGTTGCTGG	18300
AGCTGAGGAA GAAAAACAAG AACTAGTTGA AGTTGTTGAG TTCTTAAAAG ATCCAAAACG	18360
ATTCACAAAA CTGGAGCCC GTATTCCAGC AGGTGTTCTT TTGGAGGGAC CTCCGGGGAC	18420
AGGTAAAACT TTGCTTGCTA AGGCAGTCGC TGGAGAAGCA GGTGTTCCAT TCTTTAGTAT	18480
CTCAGGTTCT GACTTTGTAG AAATGTTTGT CGGAGTTGGA GCTAGTCGTG TTCGCTCTCT	18540
TTTGTAGGAT GCCAAAAAG CAGCACCAGC TATCATCTTT ATCGATGAAA TTGATGCTGT	18600
TGGACGTCAA CGTGGAGTCG GTCTCGGCGG AGGTAATGAC GAACGTGAAC AAACCTTGAA	18660
CCAACTTTGT ATTGAGATGG ATGGTTTGA GGGAAATGAA GGGATTATCG TCATCGCTGC	18720
GACAAACCGT TCAGATGTAC TTGACCCTGC CCTTTGCGT CCAGGACGTT TTGATAGAAA	18780
AGTATTGGTT GGTGTCCTG ATGTTAAAG TCGTGAAGCA ATCTTGAAAG TTCACGCTAA	18840
GAATAAGCCT TTAGCAGAAG ATGTTGATTT GAAATTAGTG GCTCAACAAA CTCCAGGCTT	18900
TGTTGGTGCT GATTTAGAGA ATGTCTTGAA TGAAGCAGCT TTAGTTGCTG CTCGTCGCAA	18960
TAAATCGATA ATTGATGCTT CAGATATTGA TGAAGCAGAA GATAGAGTTA TTGCTGGACC	19020
TTCTAAGAAA GATAAGACAG TTTCACAAAA AGAACGAGAA TTGGTTGCTT ACCATGAGGC	19080
AGGACATACC ATTGTTGGTC TAGTCTTGTC GAATGCTCGC GTTGTCCATA AGGTTACAAT	19140
TGTACCACGC GGCCGTGCAG GCGGATACAT GATTGCACTT CCTAAAGAGG ATCAAATGCT	19200
TCTATCTAAA GAAGATATGA AAGAGCAATT GGCTGGCTTA ATGGGTGGAC GTGTAGCTGA	19260
AGAAATTATC TTTAATGTCC AAACCACAGG AGCTTCAAAC GACTTTGAAC AAGCGACACA	19320
AATGGCACGT GCAATGGTTA CAGAGTACGG TATGAGTGAA AAACCTGGCC CAGTACAATA	19380
TGAAGGAAAC CATGCTATGC TTGGTGACA GAGTCCTCAA AAATCAATTT CAGAACAAAC	19440
AGCTTATGAA ATTGATGAAG AGGTTGTTT ATTATTAAAT GAGGCACGAA ATAAAGCTGC	19500
TGAAATTATT CAGTCAAATC GTGAACTCA CAAGTTAATT GCAGAAGCAT TATTGAAATA	19560
CGAAACATTG GATAGTACAC AAATTAAAGC TCTTTACGAA ACAGGAAAGA TGCCTGAAGC	19620
AGTAGAAGAG GAATCTCATG CACTATCCTA TGATGAAGTA AAGTCAAAAA TGAATGACGA	19680
AAAATAACCC TGAGAGAGGC TGGAGCCTCT CTTTTTGTG CAGTTTAGGA GCTAAAGGGA	19740
ACAGAATGGA GAAAATGGAA CAAATGTGTT TTCTAATCTG TTAGACTGTA TCTAGAAAGG	19800
GGAAAATTAT GATTAAAGAA TTGTATGAAG AAGTCCAAGG GACTGTGTAT AAGTGATAGAA	19860
ATGAATATTA CCTTCATTTA TGGGAATTGT CGGATTGGGA GCAAGAAGGC ATGCTCTGCT	19920

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TACATGAATT GATTAGTAGA GAAGAAGGAC TGGTAGACGA TATTCACCT TTAAGGAAAT	19980
ATTTCAAGAC CAAGTTTCGA AATCGAATTT TAGACTATAT CCGTAAACAG GAAAGTCAGA	20040
AGCGTAGATA CGATAAGAA CCCTATGAAG AAGTGGGTGA GATCAGTCAT CGTATAAGTG	20100
AGGGGGGTCT CTGGCTAGAT GATTATTATC TCTTTCATGA AACACTAAGA GATTATAGAA	20160
ACAAACAAAG TAAAGAGAAA CAAGAAGAAC TAGAACGCGT CTTAAGCAAT GAACGATTTT	20220
GAGGGCGTCA AAGAGTATTA AGAGACTTAC GCATTGTGTT TAAGGAGTTT ACTATCCGTA	20280
CCCCTAGTA AGTCATGCAA AAAAAATGAA AAAAATTAGA AAAAGTAGTT GACAAAGTTT	20340
GAAAAGGCTG TATAATAGTA AGAGTTGAAA ATAACAATC AGGTCCGTTG GTCAAGGGGT	20400
TAAGACACCG CCTTTTCACG GCGGTAACAC GGGTTCGAAT CCCGTACGGA CTATGGTATG	20460
TTGCGTCAGG ACCACTTGAT GAAAAAAGT TTAaaaaaac TTAaaaaatct TCAaaaaagt	20520
GTTGACAAGC GAAAGCAGTT GTGATATACT AATATAGTTG TCGCTTGAGA GAAGCAAGTG	20580
ACAAAGACCT TTGAAACTG AACAAGACGA ACCAATGTGC AGGGCGCTAC AACGTAAGTT	20640
GTAGTACTGA ACAATGAAAA AAACAATAAA TCTGTCAGTG ACAGAAATGA GTAAGAACTC	20700
AAACTTTTTA ATGAGAGTTT GATCCTGGCT CAGGACGAAC GCTGGCGGCG TGCCTAATAC	20760
ATGCAAGTAG AACGCTGAAG GAGGAGCTTG CTTCTCTGGA TGAGTTGCGA ACGGGTGAGT	20820
AACGCGTAGG TAACCTGCCT GGTAGCGGGG GATAACTATT GGAAACGATA GCTAATACCG	20880
CATAAGAGTA GATGTTGCAT GACATTTGCT TAAAAGGTGC ACTTGCATCA CTACCAGATG	20940
GACCTGCGTT GTATTAGCTA GTTGGTGGGG TAACGGCTCA CCAAGGCGAC GATACATAGC	21000
CGACCTGAGA GGGTGATCGG CCACACTGGG ACTGAGACAC GGCCCGACT CCTACGGGAG	21060
GCAGCAGTAG GGAATCTTCG GCAATGGACG GAAGTCTGAC CGAGCAACGC CGCGTGACTG	21120
AAGAAGGTTT TCGGATCGTA AAGCTCTGTT GTAAGAGAAG AACGAGTGTG AGAGTGGAAA	21180
GTTCACTG TGACGGTATC TTACCAGAAA GGGACGGCTA ACTACGTGCC AGCAGCCGCG	21240
GTAATACGTA GGTCCCGAGC GTTGTCGGGA TTTATTGGGC GTAAAGCGAG CGCAGGCGGT	21300
TAGATAAGTC TGAAGTTAAA GGCTGTGGCT TAACCATA	21338

(2) INFORMATION FOR SEQ ID NO: 21:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 6273 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:

TGTTTTTAAA GAGCCGTGTC TGGATAGACT TTCGGACGCA ACGCTCTATT AGATAATGAA	60
CTGCCTATAC ACAAGATTTC TAACCTTAGT CGACATGAGC TGAAACCTCT TATTTGTTAA	120
GTAGTTCACA AAATATTATA CACCTATTTT ATGAATAGTC AACTGTCTTT ACAGTAAAT	180
TTTAGAAAAT CATGAAAATT TTCTCTTTCT TTCCATTTTA AGTGACATTC AGTCATTCTC	240
ACATCAAAAA AGCCCAGACG AAATTGTCTG AGCATTCCTT TATCTAGTCG TTTAAGGAAG	300
TTGAGTTCAG TATGTTTAAA GTCTCTGTCC CATCATTTCT TCAACAAACC TTGTTCTTGG	360
AGAAACTCCT TGGCTACTTG CTTTGCTGAC TTGCCTTCAA CACCGACTTG GTAGTTGAGC	420
TGGCTCATCT GGCTTTCTGT AATCTTACCA GCCAATGTAT TAAGAACTCT TTCCAACCTCT	480
GGGTGTTTCT TGAGAAGAGC TTCTTTCATG AGTGGAGCCC CTTGATAAGG TGGGAAGAGT	540
TGCTTGTCAT CTTCCAAGAC CTGTAAATCA TAACGCTCCA ATTCCGCATC AGTCGAATAG	600
GCATCCGTGA TTTGAATATC CCCTGACTGA ATAGCCTGAT AGCGAAGGGC TGGCTCAATG	660
GTGCGTACAT TGAGATTGAG ACCATACATT GATTGCAAGC CTTATTTTCC ATCTTCACGG	720
TCGTTAAACT CGAGTGTAAG ACCTGCCTTC AACTGCCCTT CCACTTTTTT CAAGTCTGAA	780
ATGGTCTTCA AGCCATATTG TTGAGCAATC TTTTTCGGAA CAGCTACAGC ATAGGTGTTT	840
TGATAAGACA TGGGTTTGAG ATAGGCTAGA TGATCCTGCT TAGCAATGCC ATCACGCGCC	900
ACCTGATAAA CCTGTTCTGG TTCATGACTC ACCTTGGGTG ATGGTTGAAG CAACTTTTCA	960
GTCACCGTAC CAGTAAATTC AGGATAGATG TCAATATCGC CTTTTTTCAG AGCTTCATAA	1020
AGGAAGCTTG TCTTCCCAA ATTTCGGTTA ACAGTCGCAG TCATGCTGGT ATTTTCTTCA	1080
ATCAGCAACT TATACATATT GGCCAAAATT TCTGGTCTG GACCTATTTT CCCAGCAATA	1140
ACCAAGTTTT CCTTCTCTTT TTGAACCAA AGAGCTGGAC TATAAGACAG ACCCAGTAAT	1200
AAAGCCACCA AGGCAAAACC TGAGAAAATC GTCGGTAATT TTGCTTTTTC CATCACTTTT	1260
AGTAGGAAGT TAAAGGCAAT GGCTAGCACT GCAGAAGAAA GTGCCCAAT CAAAATCAAA	1320
CTGGCATTAT TACGGTCAAT TCCCAAAAGA ATAAAGGAAC CTAGTCCCCC TGCACCAATC	1380
AAGGCCGCCA AGGTTGCCGT ACCGATAATC AAAACAGCTG CCGTCCGAAT CCCAGACATG	1440
ATAACAGGCA TGGCGAGTGG AATTTCAAAT TTCTTGAGAC GTTCCCATCT GGTCAATCCA	1500
AAGGCAATCC CAGCTCTTG CAGGTTCCGA TCAATTCCT TCAGCCCAGT GATAGTATTT	1560
TGCAAAATAG GGAAAATCGC ATAAATCACT AGAGCTGTCA AAGCCGGCAA GGTCCCAATT	1620
CCCATCAAAG GGATAAAGAG CCCCAACAAG GCCAGAGACG GGATGGTCTG GAAAATACCT	1680
GCAATCTGCA AGACCCAGTC GGCCAGCTTC TCATGATAGC GAAGAAAAAC AGCCAAGGGA	1740

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ATCGCAAGCA AAATAGCTAG TAACAAGGTC AAAAGCGACA ACTGCAAATG TTGAGATAGA	1800
GCTGTCAACC AATCACTAAA ACGATCCTGA AAAGTTGCAA TTAAATTAGT CATGAACACT	1860
ACCTCCAAAC AAGTCTGCTA CAAAGTCTGT TGCAGGCGCT TTTAAAATTG TCTCGGGATT	1920
CGCTACCTGG CGAATTTCTC CATCCTGCAA GACAGCAATA CGGTCCGCCA ACTTCAAGGC	1980
TTTCATCCGTA TCATGGGTTA CAAAATCGT TGTTCATCCA AACTCTTTAT GCAATTCTTT	2040
TGTCAGAACC TGCAACTGTT TTCTCGAAAT AGCATCCAAG GCCGAAAAGG GTTCATCCAT	2100
GAGGAAAATC TTGGGCTGAC CAATCATAGC TCGGACAATA CCGACCCGTT GCTGTTCTCC	2160
ACCAGATAAT TCACTAGGTA AGCGATGCCC ATACTCGGCT ACTGGTAAAC CAACCTTAGC	2220
CAAAAGCTCT TCTGTTTCT TCGTAATTC TTCCTTGCTC CACCCCTTCA TTTCAGGAAT	2280
GAGAGCAATA TTTTCCGCAA CTGTTAGATT TGGAAAAAGA GCAATAGCCT GTAAAACATA	2340
ACCAGTAGAA AGACGAAGTT CACGCTCATC ATAGTCTTTG ATGCGCTTCC CATCCATATA	2400
AATATTTCCA TCAGTTGGTT CCAAAAGACG GTTAATCATC TTGAGCATGG TCGTCTTACC	2460
TGACCCAGAA GGCCCTACTA AAACCATAAA TTCCCATCC TCAATCTGTA AGTTGACATC	2520
TCTCAAGACA TCCTTTTCTG TGTAGCGCAG TGCTACATTT TTGTATTCAA TCATTCTTTG	2580
TCCTCAATTT AAAACTTCCC TCGATTGGTC AAGTCTTCTA CCTTAGGCAT AACTTCCTTA	2640
TTATCCCAAT GCTCCACAAT TTTCCCGTTC TCTAAACGGA AGATATCGTA CTGGGCATAA	2700
GCAACGCCAT CAATCTGAGT CTGACCATAG CTAACCACAT AGTTTCCTTG TCCTAAGAGT	2760
TGGAACAACAA AGTCAAAAGT GACACTATAT TCAGCCACAT AGTTTTTATA AGCAGCACTT	2820
CCTTGTCCAA TATCATGATT ATGCTGAATC AAATCGTCTG CCACATAATC ACTCCACTGC	2880
TCTAGCTCCC CATTTTGGAA AATTCTGTC AAGAAACGGC GAACCAGCTT TTTATTTTCT	2940
GCTTTCTTAT CCAAATCCTT GATTTCAAAA TCTCCAAAAA TTTGATCTAG TTGGTCATTT	3000
TCAGGTGTTT GATAGTAGTC AATGACATCC CAATGCTCAA CAATACAACC ATTCTCATCC	3060
TCACGGAAG TATCCGTCGT CACCCATTGA GCTTCTCCAC CATTCAGATA TTGATGAACA	3120
TGAACAAAGA CCAGATTGCC ATCCTCAATG GTGCGGACAA TCTTAATCTG ACGCTCTGGA	3180
TGACGCTCAA AGAAATCTGC AAAGAAGGCT GCAAATCCTT CTTTCCCGTC AGGAACACCT	3240
GTCGAATGTT GGATATAGGT ATCCCCTACA GACTGGGCTT GAGCCTCAGC AACTCGTCCG	3300
TCTTGAATGG CATGGATGTA TAGGTTGTGA GCATTTTCA CTTGTTGTGA CATATTCTAA	3360
ACCTCATTTT CCTTCTCTTT CAGATTCGCC AAAATTCTTT CTTGAAAACC TTCAAATTGG	3420
TGAATTTCTT CCTCTGAAAA TCCTTTGTAA AAGATAGTAT CCAATTTCTG ACTGACACGA	3480

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TGCCCCACTT CTTTCTGGGA CTTGCCTAAC TCCGTTAAAA CTAAATACTT CTTACGCTTG	3540
TCTTTTCCAC ACGGACTAAC AATTACAAGC TTTTGTTCCT CTAGCTTTTT TATCATAGTC	3600
GTCAGCGTAT TATTCGCAAG TCCAGTCGCA AGCGCGATAT CTGTGCGAGT TGCGCAGCCA	3660
GTTTCACTAT TCCATAAAAC CGCTAAAATC TTGCCCTGTT CACCCCTATA AAGAGCCTCA	3720
GGATCTTGAC TCAGTAACTT TTGAAAAATC CGCCCATTC ACAAACGAAT ATGATGGGCT	3780
AGCAAATGAC CATCTTTCAT AACACCTCCA ATTTATTTTCG ATATCGAAAT GAATAAAACA	3840
ATTGTAACAC TCATCGTTCT AACTGTCAAC TATTTGATT TAGAAATAAT TTTTGATAAT	3900
TATCCACACC ACCATACTCC GGCTCAACTA ACTTTTAACG AGAGTTTCTA AACTCCTTCG	3960
TCCTCCAGTC TACAAAAGCC TTCCATTCTG ACTATCCTAT ATTTTATGAG GGGACACATT	4020
TTTCCTATCA GACCATTTAT TTAAAGATA GAAGTAAATC ATAATTGCTT CCATCTGTTC	4080
TTTATAGTA TATTGAAGTT AGACTAGAGC ACTGTATCTT CTAAACATT GATAGAAAGC	4140
GATTTGAATT TCCCAATCAA TTTGTTCGTA TTTATAGCAT TTCGAACTG GAATAGGACA	4200
CCATGACTGC TAAAAGATTT CTATAAATC ATTTAATTTT CTCAATCAAT TTGTTCATAT	4260
CTTATTTTAT TCCGCTATAA TTTCACCTTA CCCTATCTTT TTCGTAGCAC CCTTCAAACA	4320
GCCTATCCCC TACCGTTTGA CGATTCTCTA CTTGCTCCA CTTCCATTAC AGAAGTTTCT	4380
TCACTACTAT GGGCTCGGCT GACTTCTCAT GATTCCTTGT TACTACTATT TGAACGCTCA	4440
CGAGATAGAT CTTACAAAAA ATGCTTTGAT CCACAATGGA ATCAAAGCAT TTAAAGAGT	4500
TCCTCATACA TAAGCGCAGA AGTCGAGTT CCTCTGTACT TGGCTTCTTC TCTTTTGACA	4560
AAGCGAGCCA AGTTGAGCAA CTCAGGTGCT GGATGTTTGG GATTTAGGAG CAATTCACGA	4620
TTGACCAGGC CTGAGAGACG AACTGCCTGC AATTGCTCAT TTGTAGTAGG CAGTTTTTTA	4680
GTAGTCTCTA GGAGAGCAGC AACTAAATCT TCACTCAAAT CATGTCGAGC ATGATTGTAA	4740
AGATCTTTTA TAAGGCTTTC TAGGTTTGGT TCTACCATCC CTACCACCTC CCTTATGGTT	4800
TAATAATGTT TAATCAAATC AACCGTTGAA CGATCCAATT TCTTCACCAA GGCTTGTAA	4860
AAAGCTTGCG CTTCTAGGAA GTCATCCATT GCATAGAGGG TTTGGTGAGA ATGGATATAA	4920
CGAGCGCAGA CACCGATAGT TGTTGATGGG ACACCACCAT TTTTCAGATG AGCTGCACCT	4980
GCATCTGTTC CGCCTTTACC ACAGTAGTAT TGGTACTTGA TACCAGCTTC TTCAGCCGTT	5040
GTCAAAGGA AATCCTTCAT CCCTGGGAGA AGCAAGTGAC CTGGATCATA GAAACGAATC	5100
AAGGTTCCAT CTCCAATCTT GCCTTGACCA CCGTAGACAT CACCTGCTGG TGAGCAATCA	5160
ACTGCGAGGA AGACTTCTGG GTCAAACCTG GTTGTAGAGG TATGAGCGCC ACGCAGACCA	5220
ACTTCTTCTT GGACGTTAGA ACCCAGATAG AGTTCATTGC CGAGTTTTTG ACCCGATAAA	5280

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GCTTCAGCTA GCTCGCTTAC CATGAGGACA CCGTAGCGGT TATCCCAAGC TTTTGAGATG	5340
ATATTTTTTTT CATTGGCTGT CAAAATTGCA GAACTATCTG GTACAATGGT ATCACCAGGA	5400
CGGATGCCAA AACTTTCTGC CTCAGCCTTG TCCGCAAAAC CACCATCAAA AACGATATCG	5460
GCAATGGCTG GCATGGTTGG TCCCCCCTTT CCACGAGTCA AATGCGGAGG AACAGAACCT	5520
GAAATCACAG GAATTTCATG ACCATCACGA GTCAAGAGTT TGAAACGTTG GCTGCTAACC	5580
ACCATGGGGT TCCAGCCACC GATTCTACG ACACGGAAGG TACCATCTGG CTTGATTTCTG	5640
CTGACCATAA AACCAACTTC GTCCATATGA GAAGCGACCA AGACGCGCGG TGCATCCACA	5700
GCTTCTGAAT GTTTGATACC AAAAATACCA CCCAAGCCAT CTGTCACCAC TTCATCCACA	5760
TGCGGTGTCA ACTTTTCAG AAGATAAGCA CGGACAGGCG CTTCATGACC TGAGACTGCA	5820
GCAAGTTCTG TTACTTCTTT AATTTTTGAA AATAATGTTG TCATTTTCAGT TCCTTCTTTC	5880
TTTCATCCAT TTTACCACTT TTTATAGGAG AAGGATAGTG GGAAGGTGGA TTTCTAAGTT	5940
AGTATCTTAG TCCTGCTCTA TCTTAGAAAA GGATAGTATT CTCTTGCATG TAGTGCAAAA	6000
TCTAGTAAAC ATTCCAAAAT TAACTCGAAT ATTTATTTCC AAACAAAAAA ACAATACACC	6060
ATCAAAGTTG TTTGGATTTT TCATGAAATT TACAGAAAAT AGTTGACTTC CCTTCTTCT	6120
TTCTTTAAAT ATATAGTTGG TTGAGTTTGG AATAGTACGC TGTAGCTGCT AAAACATTTT	6180
TAGAAATTAA TTTGACTTTC CTAATAGAGT TGTTTCATATC TTATTTCAAT TTAATATAGT	6240
ACAAAACCTAG AAAAGGAAAA AATCATGACC AGG	6273

(2) INFORMATION FOR SEQ ID NO: 22:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 28171 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:

ACAACCTTTT TCAAAAACTC ACCTTGGTAC GGAGATGTTT TGCTTTCTGC TATTATTTTC	60
GGTTATATTC ATATCAATTT TGCTTTAACT CCTCTGCTT TTTTCATTTA TGCTAGTGGA	120
GGTCTTATTT TAGCTCTATT GTATCGCATG ACTAAAAATC TCTACTATCC AATACTAGTT	180
CATATTCTCA TTAATATCAC TGCCTTCTGG GATGTGTGGT TGCTCCTATT TTCAGGAAGT	240
TAGCTTACTA AAATAATGTC GGAACTTTCC GGCATTTTCT TTTTTCACAA ATAGTCAACG	300
TTTTTCTTTT CGATATTGTA GTGGTGTGTA TCCAGTTATT TTTTGAATT GATTTTGAAA	360

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ATAAGGTTGA CTTGAGAAAG GCAGATAGTG AAGATAGTTA AGAAGAATAG GATGTTCTTT	420
TTTCCTTTTT GGAAAACTTC TAAAATATGG TATAATGAAA AGATAAAGAA GTTGGGGGTA	480
GAAGATGAAC ATTCAACAAT TACGCTATGT TGTGGCTATT GCCAATAGTG GTACTTTTCG	540
TGAAGCTGCT GAAAAGATGT ATGTTAGTCA GCCGAGTCTG TCTATTTCTG TTCGTGATTT	600
GGAAAAAGAG TTGGGCTTTA AGATTTTCCG TCGGACCAGC TCAGGGACTT TCTTGACCCG	660
TCGTGGGATG GAATTTTATG AAAAATCGCA AGAATTGGTT AAAGGATTTG ATATTTTCA	720
AAATCAGTAT GCCAATCCTG AAGAAGAAAA AGATGAATTT TCTGTTGCTA GCCAGCACTA	780
TGACTTCTTG CCACCAACTA TTACGGCCTT TTCAGAGCGC TATCCTGACT ATAAGAACTT	840
CCGTATTTTT GAATCAACTA CTGTTCAAAT ATTAGATGAA GTGGCGCAAG GGCATAGTGA	900
GATTGGGATT ATCTACCTCA ACAATCAAAA TAAAAAGGGG ATTATGCAAC GGGTTGAAAA	960
ATTAGGCTCG GAGGTCATCG AATTGATTCC TTTCCATACC CATATTTATC TCCGTGAGGG	1020
TCATCCTTTA GCCCAGAAAAG AGGAATTAGT CATGGAGGAT TTAGCGGATT TACCAACGGT	1080
TCGTTTCACT CAAGAGAAAAG ACGAGTACCT TTATTATTCA GAGAACTTTG TCGATACCAG	1140
CGCTAGCTCA CAGATGTTTA ATGTGACAGA CCGTGCCACC TTGAATGGTA TTTTGGAGCG	1200
GACGGACGCC TATGCGACAG GTTCTGGATT TTTAGATAGT GACAGTGTTA ATGGCATTAC	1260
AGTTATTCTG CTCAAGGATA ACCTAGATAA CCGCATGGTC TATGTTAAAC GTGAAGAACT	1320
GGAGCTTAGT CAAGCTGGGA CTCTCTTCGT AGAAGTCATG CAAGAATATT TTGATCAAAA	1380
GAGGAAATCA TGAAAAAAG AGCAATAGTG GCAGTCATTG TACTGCTTTT GATTGGGCTG	1440
GATCAGTTGG TCAAATCCTA TATCGTCCAG CAGATTCCAC TGGGTGAAGT GCGCTCCTGG	1500
ATCCCCAATT TCGTTAGCTT GACCTACCTG CAAAATCGAG GTGCAGCCTT TTCTATCTTA	1560
CAAGATCAGC AGCTGTTATT CGCTGTCAAT ACTCTGGTTG TCGTGATAGG TGCCATTTGG	1620
TATTTACATA AACACATGGA GGACTCATTC TGGATGGTCT TGGGTTTGAC TCTAATAATC	1680
GCGGGTGGTC TTGGAACTT TATTGACAGG GTCAGTCAGG GCTTTGTTGT GGATATGTTT	1740
CACCTTGACT TTATCAACTT TGCAATTTTC AATGTGGCAG ATAGCTATCT GACGGTTGGA	1800
GTGATTATTT TATTGATTGC AATGCTAAAA GAGGAAATAA ATGGAAATTA AAATTGAAAC	1860
TGGTGGTCTG CGTTTGATA AGGCTTTGTC AGATTTGTCA GAATTATCAC GTAGTCTCGC	1920
GAATGAACAA ATTAAATCAG GCCAGGTCTT GGTCAATGGT CAAGTCAAGA AAGCTAAATA	1980
CACAGTCCAA GAGGGTGATG TCGTCACTTA CCATGTGCCA GAACCAGAGG TATTAGAGTA	2040
TGTGGCTGAG GATCTTCCGC TAGAAATAGT CTACCAAGAT GAGGATGTGG CTGTCGTAA	2100
CAAACCTCAG GGAATGGTTG TGCACCCGAG TGCTGGTCAT ACCAGTGGAA CCCTAGTAAA	2160

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TGCCCTCATG TATCATATTA AGGACTTGTC GGGTATCAAT GGGGTCTCTGC GTCCAGGGAT	2220
TGTTACACCGT ATTGATAAGG ATACGTCAGG TCTTCTCATG ATTGCTAAAA ACGATGATGC	2280
GCATCTAGCA CTGCCCCAAG AACTCAAGGA TAAAAAGTCT CTCCGCAAAT ATTGGGCGAT	2340
TGTTTCATGGA AATCTACCTA ATGATCGTGG TGTAATTGAA GCGCCGATTG GCCGGAGTGA	2400
AAAAGACCGT AAGAAACAGG CTGTAAGTGC TAAAGGGAAG CCTGCAGTGA CGCGTTTTCA	2460
CGTCTTGGA CGCTTTGGCG ATTATAGCTT AGTAGAGTTG CAACTGGAGA CAGGGCGCAC	2520
TCATCAAATC CGTGTCCACA TGGCTTATAT CGGCCATCCA GTCGCTGGTG ATGAGGTCTA	2580
TGGTCCTCGC AAGACTTTGA AAGGACATGG ACAATTTCTT CATGCCAAGA CTTTAGGTTT	2640
TACTCATCCG AGAACAGGTA AGACCTTGGA ATTTAAAGCA GATATCCCAG AGATTTTTAA	2700
GGAAACCTTG GAGAGATTGA GAAAGTAAGA ATGAAAAAGA AATTAAGTAG TTTAGCACTT	2760
GTAGGCGCTT TTTTAGGTTT GTCATGGTAT GGGAAATGTT AGGCTCAAGA AAGTTCAGGA	2820
AATAAAATCC ACTTTATCAA TGTTCAAGAA GGTGGCAGTG ATGCGATTAT TCTTGAAAGC	2880
AATGGACATT TTGCCATGGT GGATACAGGA GAAGATTATG ATTTCCCAGA TGGAAGTGAT	2940
TCTCGCTATC CATGGAGAGA AGGAATTGAA ACGTCTTATA AGCATGTTCT AACAGACCGT	3000
GTCTTTCGTC GTTTGAAGGA ATTGGGTGTC CAAAACTTG ATTTTATTTT GGTGACCCAT	3060
ACCCACAGTG ATCATATTGG AAATGTTGAT GAATTACTGT CTACCTATCC AGTTGACCGA	3120
GTCTATCTTA AGAAATATAG TGATAGTCGT ATTACTAATT CTGAACGTCT ATGGGATAAT	3180
CTGTATGGCT ATGATAAGGT TTTACAGACT GCTGCAGAAA AAGGTGTTTC AGTTATTCAA	3240
AATATCACAC AAGGGGATGC TCATTTTCAG TTTGGGGACA TGGATATTCA GCTCTATAAT	3300
TATGAAAATG AAAGTGATTC ATCGGGTGAA TTAAAGAAAA TTTGGGATGA CAATTCCAAT	3360
TCCTTGATTA GCGTGGTGAA AGTCAATGGC AAGAAAATTT ACCTTGGGGG CGATTTAGAT	3420
AATGTTTCATG GAGCAGAAGA CAAGTATGGT CCTCTCATTG GAAAAGTTGA TTTGATGAAG	3480
TTTAATCATC ACCATGATAC CAACAAATCA AATACCAAGG ATTTCAATTAA AAATTTGAGT	3540
CCGAGTTTGA TTGTTCAAAC TTCGATAGT CTACCTTGGA AAAATGGTGT TGATAGTGAG	3600
TATGTTAATT GGCTCAAAGA ACGAGGAATT GAGAGAATCA ACGCAGCCAG CAAAGACTAT	3660
GATGCAACAG TTTTGTATAT TCGAAAAGAC GGTTTTGTCA ATATTTC AAC ATCCTACAAG	3720
CCGATTCCAA GTTTTCAAGC TGGTTGGCAT AAGAGTGCAT ATGGGAACTG GTGGTATCAA	3780
GCGCCTGATT CTACAGGAGA GTATGCTGTC GGTGGAATG AAATCGAAGG TGAATGGTAT	3840
TACTTTAACC AAACGGGTAT CTTGTTACAG AATCAATGGA AAAAATGGAA CAATCATTTG	3900

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TTCTATTTGA CAGACTCTGG TGCTTCTGCT AAAAAATTGGA AGAAAATCGC TGGAATCTGG	3960
TATTATTTTA ACAAAGAAAA CCAGATGGAA ATTGGTTGGA TTCAAGATAA AGAGCAGTGG	4020
TATTATTTGG ATGTTGATGG TTCTATGAAG ACAGGATGGC TTCAATATAT GGGGCAATGG	4080
TATTACTTTG CTCCATCAGG GGAAATGAAA ATGGGCTGGG TAAAAGATAA AGAAACCTGG	4140
TACTATATGG ATTCTACTGG TGTCATGAAG ACAGGTGAGA TAGAAGTTGC TGGTCAACAT	4200
TATTATCTGG AAGATTCAGG AGCTATGAAG CAAGGCTGGC ATAAAAAGGC AAATGATTGG	4260
TATTTCTACA AGACAGACGG TTCACGAGCT GTGGGTTGGA TCAAGGACAA GGATAAATGG	4320
TACTTCTTGA AAGAAAATGG TCAATTACTT GTGAACGGTA AGACACCAGA AGGTTATACT	4380
GTGGATTCAA GTGGTGCCTG GTTAGTGGAT GTTTCGATCG AGAAATCTGC TACAATTAAA	4440
ACTACAAGTC ATTCAGAAAT AAAAGAATCC AAAGAAGTAG TGAAAAAGGA TCTTGAAAAT	4500
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GATTGGTGTC AAAAAGGAAA CCTTTCAACT CATGCTAGAA CACCTGAATT CAGCCTATCA	18600
GATTCAGCAC CGAAAAGGTG GACGTCCACG TAGTCTGCCC ATGGAAGACC AGCTCATTAT	18660
GACCTCCGT TACTTGCGAT ATTATCCAC TCAGCGTCTG CTGGCCTTTG ATTTTGGCGT	18720
CGGTGTAGCT ACGGTAAATG CCATCATCAC TTGGGTGGAG GATACACTTC GTGCGTCAGG	18780
TAGCTTTGAT TTGGACCATT TAGAAGCCCC GAGTGCTGCT GTGGCTATTG ACGTGACCGA	18840
AAGTCCGATT CAGCGTCCA ACAAACCAA AGCAAAAATT ATTCTGGTAA AAAGAAACGA	18900
CACACCTTAA AAACCTCAAT TATGCTGGAT TTGACGACAC ATAAAGTCTG TCAATGGCC	18960
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CCTGAAACGA CGCTTGCCTT TGTGACCTA GGTATTTAG GCATCTTGAA ATTTCATGAG	19080
AATACTTTCA TTCCTGCTAA AAATTCCAAA AATCGCCGCC TGAGTGAGGA TGATAAGCAG	19140
TTAAATAAAG AGATGTCAGC GATACGAATT GAAATTGAAC ATTTTAACGC TAAATTCAAG	19200
ACCTTCCAAA TCATGTCAGT CCCTTATCGT AACCGCAGAA AACGTTTCGA GTTACGGGCG	19260
GAATTAATTT GTGCCATCAT CAATTATGAA GTGAACTAGA TTCCGAACAA GTCTAATATA	19320
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ACGATTAGGC ACGATGGAAA GAACTTTTAT GTGGCTGATG ACGATCAGTG CATCTTCCTG	19440
TGTCATAATC ACAGGGCACA AGAAAGTAGG AATTTGAAAA GATGATTGAC CAACTATCTA	19500
AGTATTACAG TTGTAGGATA CTAAGTAAA AGGATATTCC AAGTATTTTA TCTTTATATG	19560
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GGAATGGATC TGACCTTGTG GCTGTTATGG ATTTTGTCTA TGCATATCCT GATGAGGAGA	19740
CTGTTTTTAT TGGTTTGTAT ATGGTTGATC AAGCCTATCA GAGAAAAGG ATTGGTAGTC	19800
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TGGCGGCATT TATGACGATC GCTTTTGTAGT TAAACCCGTG CAAGCAGTCT TAGATAAGAT	20160
TGACCAATCT TCTTTTGAGT TTCCATACAA AGGTGCCAAA GAAATGATTT GAGTGGAAGA	20220
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GCCCAACCT AAAAAGAAAA AGCAAGGGTG AACGAAGTAA AAAAGAAGTC TGCTAAGGCC	20340
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ACTTGCGAAG TCACCCTTTT CTTTTCAAAA TTTATACTAA ATCATTGATA TCAGTGTAGT	20640
CACGATTAAG TCCTTGAGCA ACTGGTAGGT TAGTCAAGTA ACCTTGATAA GTAGTCACAC	20700
CTTGACGCAA GCCTTCATCT TCAGAGATTG CTTGTGCGAA TCCTTTGCCA GCCAAAGCTT	20760
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AGGGATGAGA ATGGCTCCAA TCACCACATC AGCATCTCTC AACTTGCTT CAATGTTGAA	21060
TGAATTAGAC ATAAGAGTTT GAATTTGACT TCCAAAGACT TCTTCTAGAA CTGAGAGACG	21120
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AACAGCCATA CGACCTGCAA CCTCACTCAT AGGAACGAGG AGCGGTAGTT GTCCTTGATT	21360
GTCACGAACA GTTTCAGTTG TTTTGTCTGT TAACATAGCA TCTGCTAATT CTGGAGCAGC	21420
GGCCATGTGC AAGTAGGTGA AGAGAAGAAG ATCGTCGCGC AAGTAACCGT ATTCAGAACT	21480
TAAAGATTCT TTTACTTTCA CAACCAACTC TGCTGCCCAA GCTTCACCAG CAGTAGCGAC	21540
AATCTCAGCT CCTTGCTTTT GATAGTCAGC ATCAGTAAAG CCAGAACCGA GACCAGCATT	21600

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CTACCTTTCA ATTGACGGTC TTGTTTGGT TGTACATTC CAGTTCATAA ATCAAAAATG	21780
TGACGGTTTC ATTGTATATG AAACCGCTTC AAAAATCAAG AAAAAGTTGT CATCCAAATT	21840
TTTTTATGCT AGACTAGTGA AAATCAAGCT CTAATGGAGG GAAAAGTATG GAATCAATAT	21900
TTGTGAAATT TGCCAGTAT CCGTCTATAG AAACGGAGCG TTTATTGCTC AGACCTGTAA	21960
CTTTGGATGA TGCGGAACAA TGTTTGACTA TGCCTCGGAC AAGGGTAATA CACGTTACAC	22020
TTTTCCAACC AATCAAAGCT TGGAAGAAAC CAAGAATAAC ATTGCTCAGT TCTACTTGGC	22080
TAATCCCTTG GGACGTTGGG GAATAGAACT AAAAAGCAAT GGTCAGTTTA TTGGAACCAT	22140
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CCAGCATGAA AAAGGCCGAA TCGTGACAAG AGTTCATTAT GTCTTGACCA AGGAAGACTA	22440
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GAGAAGAAGC AGTTAGTCAA CAGACTGGTT CGGGGACAGC TTCTTCAACA AGCAAGGAAA	22980
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TTACAGTGGA TTAAGAATTT CTCTATTCCC CTAATTTACC TGAGTTTCTT ATTACTTTGG	23220
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ATCTTTGGAT TTTGGTTTGT TTTTCAAAAT TGGCAACAGA GTCAAGCGAG TCAAAATCTG	23400

GCGGATTCTG TTGAAAGGGT ACGGATTTTG CCTGATACTA TTAAGGTAA TGGTGATACT	23460
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GAGGAGGAGA AAGAAGCCTT TCAAGCTTTA ACTGACCTGC ATGAGATAGG ACTAGAAGGG	23580
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AAGACTCAGG GAATTTACCA GACTCTCAAT ATCAAAACAA TCCAGTCACT TCAAAAGATT	23700
GGCAGTTGGG ATATAGGAGA AAAC TTGTCC AGTTTACGTC GAAAGGCTGT GGT TTGGATT	23760
AAGACGCACT TTCCAGACCC TATGGGCAAT TACATGACAG GACTCTTGCT GGGACATCTG	23820
GACACCGACT TTGAGGAGAT GAATGAGCTT TATTCCAGTC TAGGAATTAT CCACCTCTTT	23880
GCCCTATCTG GCATGCAGGT AGGTTTTTTC ATGAATGGAT TTAAGAACT TCTCTTGCGA	23940
TTGGGCTTGA CCCAAGAAAA GTTGAAATGG CTGACTTATC CCTTTCCCT TATCTATGCG	24000
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CATGGGGTTA AGGGCTTGGA TAATTTTGCC TTGACGGTGC TTGTCCTCTT TATTGTCATG	24120
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TCAAAAAATG GCAAGAAAAG ATGACGACCA GCAATGCCCA GCGAACCTTG ATTCCCTATC	24780
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ATAAGCAATT TCTCTTACG GGAAATTTGG AGGAGAAAGG AGAGAAGGAC TTGCTGAAGC	25140

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ACTATCCAGA CTTGAAAGTA AATGTTTTGA AAGCTAGCCA ACATGGCAAT AAAAAATCAT	25200
CAAGTCCAGC CTTTCTAGAA AAACCTCAAAC CAGAGCTTAC TCTTATCTCA GTTGGAAGA	25260
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GACAGCTATT CTGAGTATAA AGTTGGCGGA GGCTGGAAC ACGCTCGTTA TGAGGTCATA	25740
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CTTTATTTTA TTATGAGAGT ATTGAATGGC TGGATGGAAA CTTAAGTGGG ATGGACTACC	26040
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TAGACGTGCA AAAAAATCTT TTGACGCGAA AGACAGAAAT TCTGACTTTA TAAAAGAAG	26700
GGCGCTGGAA AGAAGCCTAC TATTTGCAGT GGCAAGATGA AGAGAAGAAT TATGAATTTG	26760
TATCAAATGA CCCGACTGCT AGCCCTGGCT TAAAAATGGG GGTGACCGC GAACGGAAGA	26820
TTTACCAAGC CCTGTATCCC TTGAACATAA AAGCACATAC TTTGGAGTTT CCGACCCACG	26880
GGATTGATCA GATTGTCTGG ATTTTAGAGG TTATCATCCC AAGTTTGTGT GTGGTTGCTA	26940

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TTATTTTAT GCTAACACAA CTATTTGCAG AAAGATATCA AAATCATCTG GACACAGCTC	27000
ACTTATATCC TGTTCACAAA GTGACATTTG CAATATCCTC TCTTGGAGTT GGAGTGGGAT	27060
ATGTAACGTG GCTGTTTATC GGAATCTGTG GCTTTTCTTT TCTAGTGGGA AGTCTGATAA	27120
GTGGTTTGG ACAGTTAGAT TATCCCTACC CAATTTATAG CTTAGTGAAT CAAGAAGTAA	27180
CTATTGGGAA AATACAAGAT GTATTATTTT CTGGCTTGCT CTTAGCTTTC TTAGCCTTTA	27240
TCGTCATTGT GGAAGTTGTG TACTTGATTG CTTACTTTT CAAGCAAAAA ATGCCTGTCC	27300
TCTTTCTTTC ACTCATTGGG ATTGTTGGCT TATTGTTGG TATCCAAACC ATTCAGCCTC	27360
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GAAGATTACC TAAGCAGATT GATAATGTCG ATCTAAATTG GAGCATGGGA ATGGTCTTAC	27480
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GCCTGGCCCT ACGGATGAAA AGTTTCGAAG AAACGCTATC ATAACGTGCG GGCTTGATA	27840
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CAAGACTTAT TCATCAATGA TGAGATTCGT GTACGTGAAG TTCGCTTGAT TGGTCTTGAA	27960
GGAGAACAGC TAGGTATCAA GCCACTCAGT GAAGCGCAAG CTTTGGCTGA TAACGCTAAT	28020
GTTGACCTAG TATTGATTCA ACCCCAAGCC AAACGCCTG TTGCAAAAAT TATGGACTAC	28080
GGTAAGTTCA AATTTGAGTA CCAGAAGAAG CAAAAAGAAC AACGTAAAAA ACAAAGCGTT	28140
GTACTGTGA AAGAAGTTCG TCTAAGTCCG G	28171

(2) INFORMATION FOR SEQ ID NO: 23:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 7147 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:

CCGCTCAACT TTTGCAATCA AGGCTAAGTA GACAGCAGCA AATTCATAT TGTATAATTT	60
CTGACTCATA CTTCTCTCTT TCTATGTGTA CTAGTATAAA TAAGAAAAAG AAGGCCGTCA	120

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AGCCTTCTTT TGATTTATTC TTCTGCTTCA TCTTCTGTAA ATTGACTATT GTACAAGTCA	180
GCGTAGAAGC CACCTTGCGC CATCAGTTCC TCATAGTTGC CTTGCTCGAT GATATTTCCA	240
TCTTTCATGA CCAAGATCAA GTCTGCATTT CGGATGGTTG ACAAGCGGTG GGCAATGACA	300
AAGGATGTGC GTCCTTCCAT CAAACGGTCC ATGGCTTTTT GGATCAATTC CTCTGTCCGT	360
GTGTCAACAG AAGAAGTCGC CTCATCCAAA ATCAAAAGCG GTGCATCCTT AAGAAGGGCA	420
CGAGCAATAG TCAATAGTTG TTTTGTCTT ACAGACAAGG TCACGGTGTC ATCCAAGATG	480
GTATCATAGC CATCTGGCAA GGTCATAATA AAGTGGTGAA TTCCACAGC CTTACTAGCT	540
TCCATCATTC GTTCATCACT AATCCCTATT TGATTATAGA TGAGATTGTC TCGAATAGTT	600
CCTTCAAAGA GCCAGGTATC CTGCAAGACC ATTGAAAAGG CATCATGCAC TTCTGAACGC	660
GTCATAGCCT TGGTATCCAC ACCATCAATG CGAATACTTC CCTTATCAAT CTCATAGAAT	720
TTCATCAAAA GATTGACAAAT GGTTGTCTTA CCAGCCCCAG TCGGCCAAC AATGGCAACC	780
TTTGTACCAG CATGAGCTGT CGCAGAGAAG TCATAGTCTT GAACATTGAC ACCGTCCACC	840
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CCAGAACCTG TTGACCCAAT AAAGGCCACT GTTGTACCAG TTTCTGCTTT AAAGCTAACA	960
TGTTCAATAA CTGCCTCCGA ATTTGCCGCA TAGCGgAAGG TCACATCCTT AAACGACC	1020
TGACCTTTGA AGTTTTCATC AGTCAGCTGC ACTGAAACAG GGTTTTGGAT AGAAGAATGC	1080
AAATCTAAAA CTTGATTAAT CCGCTTAGCA GAGACCATAG TTCGGGGAAG AACGATGAAG	1140
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GCCATAAGAC GGTGACAAA CAAATTCAAA CGGGTCAATT CATCATTTAC TGCTGCAAAT	1380
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TCACGAGTGA TACTGTTTCTG TTTATCTGTC AGCCCCTGAA TCAAGGACTG TTTTGGAAAG	1500
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CCACGCGTTA CCACTTGCAA GCCCATAGTA ATCAACATTT GAACTTGAGT AATGTCATTG	1680
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AAACTCGGT TAAAAATATC ACTTCTCAGC CTACTAGTAT AAGAAGCCGC CACTCGGGAT	1800
GCAAAAAATC CAACTGCAAC TACGGACAAG AAGGCAAGAA AGGACATTCC CATCATCATG	1860
CTTGCCGACT GCCACAACCT ATCTAAATTA GTTCTTGAC TACCTAGCAA ATCCGTAATT	1920

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TTCGAGATAT AGGTCGGCAC TTCCAACCTCT AGATAGACCG AAAAGCAAGT AAAGAGAATG	1980
GCTAGTAAAA TCATCCCCCA TTCTTTTCTA CTAATTCTTT TGGCTAATTT CTTTATCTC	2040
TCCTCCTATT CCCTTGATAT TTTGCCTGTA GTTGACCGAG AACCTTCTCA AAAATCAGTA	2100
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CCTGTTGCAT CTGAGAACGT GCTTGTCCG TCAGACGAAC AAACCTAGCC CGCTTATCAA	2220
CAGGACTCGC CTCCAATTCC ACCAAACCAT TTTGCACTAT ACGCTTAACC AGATTACTAG	2280
CAACAGGCTT GGTAATATTG AGTTCCTGCT CGATATCTTT AATCAAGACC AAGTCTGGT	2340
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CACCAAATTT TGCATATACT TTAGAGTTAG CTCCATCTTT AGCCGTTTTT TTGGCTACGA	3300
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GGATAGCACT TTACCTGCTA AGATGGTCTT GCCTTTCTAT CTTTATCAAC AGGCACTCAT	3480
CCACATTCAA AAAACAACT AGACCATTTAT CTGCAATAG AAAGTTTCAG CCAAGTTTGA	3540
CAAAGTCAGC TCAAATTACT GTTTGAAGTT TGTAGATATA AGCGACAAAA ACAATCATAC	3600
TGCACCTTTT GTTGACAGTC TACTCCAGAC ATATCATAGT TCAAGTAAAT ACTTTGAAAT	3660

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TCAACAGTTC TTATAGGCGC TATTGTATTC TAAGAAATCA ATAGAAGAGT TTCTAAGCAA	3720
ACCTCTAATA CTCAATAAAA ATCAAAGAGC AAAGTAGAAA GCTAGCCTCA GGTTGCTCAA	3780
AACACTGTTT TGAGGTTGCG GATGGGGCTG ACATGGTTTG AAGAGATTTT CGAAGAGTAT	3840
AATTTACGTG TTCCCAAGAT GGAGAAGTTA GACTAGTACA CTGGCACTTC TAAACATTG	3900
CTAGCAATTG ATTTGTTTAT ATTTAATTTT ATTTTTTCCA TAAATGGGTA TTAGATATAA	3960
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GGATAATCAA TCCCCTGTAT ATCAAGGAAT TGGCTACCCCT TTTTACTTTT TTACACATTC	4080
TGTTTGATAG ATTCATTTTA ACATCACGAG CATACTCCAA TGGAAATCGC TAGGCAAGAG	4140
ATAAACTTTC AGATATCCGC AGAGAGATCA TCGCCTCTTT TTGTCGCAAG CATTCTCCTC	4200
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ATCGTCCGCT TACGCACTAG TGGCAAATCG GTTTTTTCAT AAACCGTACG CCACCATTCC	4320
CAGGCAAGCC CGGTACACTC TCTAATTTTG ACAGAGAGAT TACGAACATT CCCTTTTAAA	4380
GGAATACTAG TGGTAAAGTG AGCCGTTAAA TCCTGCCCAT TTCTGTCCCA AGCCTTAGGA	4440
GTCAAGACTT CCTTACCTTG ATGATCATAG GATAATTCAT TCCAAGTAAT ATAATATTGG	4500
GCAACATAGG CACCACATG ATCCAGCAGT AAATCTCCGT TTCTGTAAGC TGTAACCTTA	4560
GTCTCAACAT AGTCTGTACT ATTTTGAAAG GTCGCAACTA CATTGTCACG TAAAAAGAA	4620
GTTGTATAGG AAATCGGCAA GCCTGGATGA TCTGCTGTAA AGCGACTGCC TTCTTGAATC	4680
AAGTCTCTA CCATATCCAC CTTGCCTGTT ACAACTCGGG CACCCGAACT TGGGTCGCCC	4740
CCTAAAATAA CCGCCTTCAC TTCTGTATTG TCCAAAATCT GTTTCCTACTC TGTCTGAGGA	4800
GCTACCTTGA CTCCTTTTAT CAAAGCTTCA AAAGCAGCCT CTACTTCATC ACTCTTACTC	4860
GTGTTTCCA ACTTGAGATA GACTTGGCGC CCATAAGCAA CACTCGAAAT ATAGACCAA	4920
GGACGCTCTG CAGAAATTCC TCTCTGTTTT AAATCCTCTA CCGTTACAGT ATCTTGAAC	4980
ACATCTCCTG GATTTTAAAC AGCATCTACG CTGACTGTAT AATAAATCTG CTTAAAATTA	5040
ACAATCTGAA TCTGCTTTTC GCCTGAATGG ACAGAGTTAA AATCAATATC AAGAGAATTC	5100
CCTGTCTTTT CAAAGTCAGA ACCAACTTG ACCTTGAGTT GTTCCATGCT GTGAGCCGTG	5160
ATTTTTTCAT ACTGCATTCT AGCTGGGACA TTATTGACCT GACCATAATC TTGATGCCAC	5220
TTAGCCAACA AATCGTTTAC CGCTCCGCGA ACACCTGAAT TGCTGGGGTC TTCCACTTGG	5280
AGAAAGCTAT CGTACTTGC CAAACCAGGC AAATCAATAC TATAAGTCAT CGGAGCACGA	5340
TCGACCGCAA GAAGAGTGGG ATTTATCTCT AACAAGGTCT CATCCACTAC GAGAAGTGCT	5400
CCAGGATAGA GCGACTGTC GTTGGTAGCT GTTACAGAAA TATCACTTGT ATTTGTCGAC	5460

AAGCTCCGCT TCTTCTTTC GATAACAACA AACTCATCGG GTAGCTGATT ACCCTCTTTG	5520
ATGAAACGAT TTTCAATACT TTCTCCCTGA TGGGTCAAGA GTTCTTTTTT ATCGTAATTC	5580
ATAGCTAGTA TAAAGTCATT TACTGCTTTA TTTGCCATCT TCTACCTCCT AATAAGTTCC	5640
TGGATTGAGT TGCATAAACT CAGACTTGTT CAGCGAAATC AGCCGTGGTT GGACTAAGTA	5700
ATCCAAAATT TCCTCGTACA ATTCTTCTGA GACATTGCGT CGCCGTCTGG CTAAATAAGA	5760
AGTCGGAATG ACCGTATTAT CCAACATAAA TACCTTATCT AAGTCAATCA AGGTTGGTCT	5820
TGTAAAAGGA TTACGAGCTA GATCCGGCTC TTCTATCATA AAGTTCTTGA CCAAACGTCT	5880
GGTCAAGAGA GCTGGTTTGA AGGTCTGATT TTTAACCAAC TCTTTGTTTT TAGTCATGCT	5940
GTTGTCAATA CAGATATACA TATGATTCTT CACAGCCAAA TCGCTACTAA TAGTCGAAAA	6000
AGGCAAATAA AGAGCTACAA CATCTCCTCT CTTAATCAAG CAAGAGCACC CCCTTTTCTC	6060
CTAATGTAAC ATAGACAGGA TTGACCAAGT CTTCTGATTG ACTCAGAATT TCCAAAGTTT	6120
GAGTTTGGCG CGCTGTCAAT TTAGTAGCAT CTTGTCTCTT CAATACAAAA TGCTTGTCGC	6180
CAATAACCTT GACAATATAA TCCTTCTCCA AAGCTGACTG GTAAATCCAC ATCAGATGTT	6240
GTCTGTCTG AGAACTCAAG AGAGAAGGAT TTTCAAGCCT CCCGATAGTC TGATAAAAAAT	6300
CAAAAACAGG AGCTAACTCC TGCCAATCTG ATTGGCTAGT TGTCAGGCT AGAAAAAGGG	6360
CTTTGCGAGC TGATACTTCT TGGTTAGCCT TGAGAGTTAC TTTCCCCTCC AAGTTTTTTA	6420
GAAATCGGGA AACTCCAGAA AGCAAATTTT TCTCTAACTG CGAGAAATAA AAACCTTTCTG	6480
TTCCCAGACA TAAGTCTTTC ATGTCGCTTT CTCTAGCAAA TAAGAGCTCA AACATTGAT	6540
AGTAAAAGAA AAATATCTGG CACTGGGTCG CGTCATCTT TTCCTTATCG GCTTCTTTTT	6600
TTAACCAGAG CAAGGCGGAC AGGTAGCTGG ATTGAGACAT TTCCTTACC TCCTACTCTT	6660
TTTTAACTGG AGCATCTGCA CTAGCTGCCA CTTCTTTTGA CTGGATACTT TCCCCTGGT	6720
TAATCTCCTC TGAGATAAGA CCTTCGCATG TCTTGACAAA TAGGGCAAAA GCCTTGGTCT	6780
TTCTGCATA TTTCTCCGTT TGGCATTGAT AGAGGAATTT TTCTTTCTCC AGGAGTTGCG	6840
CAGTTTTTTG GTAAGAAATC CAATTTTCCT TTGCATTATA CAAATTGATA ATCCCCTCAC	6900
ACAGCAAGCC GAGACTGGAT AAGGCAACCG AAATCAAACG GTAGCGATCA CCTGGCATAG	6960
GAATAGCACA AAAGACAGCT ATGAGGAAAC CTGCCACGAT TTCTGTTATT TTTAATACCT	7020
TATAGCGCCT ACGATGTTGA ACGCTTTTCT TTAaaaaaTG AGCTATCTGT ACGTCTAATC	7080
GCTCTGTCAG GTACATTCTT TCTGGCGTCA TATTCGTAAC TCCTTTCATT TACTTTGATA	7140
ATCAGGG	7147

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(2) INFORMATION FOR SEQ ID NO: 24:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 755 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:

CCGCATGGGA TTGGTGTCTT TTTGGGCAAT CTCTTTGACC AAACCTGGAAA CATGTTTAT	60
GCGCCTGCCT TTAGTGCCCT TGTCGGCGGT ACGTCTATAT GATCCTAGTC GCAAAAGTTC	120
CGCGCTTTGG AGCCATTACC ACTATCGGCC TTGTCAATGC CCTCTTTTTC TTGGGAACTA	180
AACACGGTGC TGGTTCCTTC CTCCTGGAA TTATCTGTGG CCTCCTAGCA GATGGAGTAG	240
CTCATTTAGG AAAATACAAG GACAAAACAA AGAACTTCCT TTCTTTCATT ATTTTCGCCT	300
TTAGTACAAC AGGACCAATC TTGCTTATGT GGATTGCGCC CAAAGCCTAT ATGGCTACTC	360
TTCTGGCAAG AGGAAAATCC CAAGAATATA TCGACCGTAT CATGGTCGCT CCAAACCTG	420
GAACGTGCCT TCTATTTATC GCAAGTATTG TCATCGGAGC CCTAGTGGGT GCCTTGATTG	480
GACAAGCCTT GAGTAAAAAA TTTGCCCAGA AAATCTGATC AGTAAAAAG AGCCACGCGG	540
CTCTTTTTTA TTTATGGCTC AATTTCTTAG TCAAGAAATC TCCCAAGAAT TGGATTGCAA	600
AGATAATCAA AATGATAATA ATGGTTGCCA AGATGGTCAC ATCGTGATTG TAGCGGTAA	660
ATCCATAAGC GATGGCTACG TTACCGATAC CACCAGCTCC AACCACACCG GCCATAGCTG	720
TtccCAACA AGGGaAtCAA GGTcACAGTC GTCAC	755

(2) INFORMATION FOR SEQ ID NO: 25:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 3010 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:

TTCAATTGGT ATCTCAATCA ACGGTCTTCA CATGGTTTCA ACTGGTTTGA CTCTTGAAAA	60
AGCGAAAGCT GCTGGTTACA ACGCAACTGA AACAGGCTTT AACGATCTTC AAAAACCAGA	120
ATTCAATGAAA CATGACAACC ATGAAGTAGC AATTAAGATT GTCTTTGACA AAGATAGCCG	180
TGAAATTCTT GGTGCCCAAA TGGTTTCACA TGATATTGCA ATTAGCATGG GAATCCACAT	240
GTTCCTACTT GCTATCCAAG AGCATGTGAC AATTGATAAA TTGGCATTGA CAGACCTCTT	300

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CTTCTTGCCA CACTTCAACA AACCATACAA CTACATCACA ATGGCTGCCC TTACGGCTGA	360
AAATTAAAA TGAATGAGCT ATCTGGCCTT AAGTTAAGGT CAGATAGTTT TTAGCTAATT	420
TGTCCCCATA CAATTATAGT TTTTATCT TGTGCTTCAT TCTGTTCTGA CTTAAAATGA	480
AAAGGTAGCT ACCAATACAA ATGATGAGGA TAAAACAAAT GACTGAAAAT CGTTATGAAC	540
TAAATAAAAA CTTGGCACAG ATGCTCAAGG GTGGTGTTAT TATGGATGTG CAGAATCCTG	600
AACAGGCTCG TATCGCAGAA GCTGCTGGTG CGGCAGCTGT GATGGCCTTG GAACGAATTC	660
CGGCTGATAT TCGTGCAGCT GGAGGAGTTT CCCGCATGAG CGACCCAAAG ATGATTAAAG	720
AAATCCAAGA AGCGGTTAGT ATTCCAGTAA TGGCTAAGGT CAGAATCGGG CATTTTGTTG	780
AAGCTCAGAT TTTAGAGGCT ATTGAAATTG ATTATATCGA CGAGAGTGAA GTTCTATCTC	840
CAGCTGATGA CCGTTTCCAT GTGGACAAGA AAGAATTCCA AGTTCCTTTT GTCTGTGGTG	900
CTAAGGATTT GGGTGAAGCC TTGCGTCGTA TCGCTGAAGG TGCTTCCATG ATTCGTACCA	960
AAGGAGAACC AGGGACAGGG GATATCGTCC AAGCTGTTTCG TCATATGCGT ATGATGAATC	1020
AGGAAATTCG CCGCATTCAA AACTTACGTG AGGACGAGCT TTATGTTGCT GCCAAGGATT	1080
TGCAAGTCCC TGTAGAATTG GTCCAATATG TTCATGAACA TGGAAAATTG CCAGTTGTAA	1140
ATTTGCGTGC TGGAGGTGTT GCAACGCCAG CAGATGCTGC GTTAATGATG CAATTAGGGG	1200
CAGAGGGGGT CTTGTGCGGT TCAGGTATTT TCAAGTCAGG AGATCCTGTT AAACGAGCGA	1260
GTGCCATTGT TAAGGCTGTG ACTAACTTCC GTAATCCTCA AATCCTAGCT CAAATCTCTG	1320
AAGATTTAGG AGAAGCCATG GTTGGTATTA ATGAAAATGA AATCCAAAT CTCATGGCTG	1380
AACGAGGAAA ATAGATGAAA ATCGGAATAT TGGCCTTGCA AGGGGCCTTT GCAGAACATG	1440
CAAAAGTGCT AGATCAATTA GGTGTCGAGA GTGTAGAACT CAGAAATCTA GATGATTTTC	1500
AGCAAGATCA GAGTGA CTG TCGGGTTTGA TTTTGCTGG TGGTGAGTCT ACAACCATGG	1560
GCAAGCTCTT ACGTGACCAG AACATGCTAC TTCCCATCCG AGAAGCCATT CTATCTGGCT	1620
TACCAGTGTT TGGGACCTGT GCGGGCTTAA TTTTGCTGGC TAAGGAAATC ACTTCTCAGA	1680
AAGAGAGTCA TCTAGGAACT ATGGATATGG TGGTCGAGCG TAATGCTTAT GGGCGCCAAT	1740
TAGGAAGTTT CTACACGGAA GCAGAATGTA AGGGAGTTGG CAAGATTCCA ATGACCTTTA	1800
TCCGTGGTCC GATTATCAGT AGTGTGGTG AGGGGTGAGA AATTTTAGCA ACAGTGAACA	1860
ATCAAATTGT TGCAGCCCAA GAAAAAATA TGTGGTAAG TTCTTTTCAT CCAGAATTGA	1920
CTGATGATGT GCGCTTGAC CAGTACTTTA TCAATATGTG TAAAGAAAA AGTTGAGATT	1980
GAATTTCTCA ACTTTTTTAC ATGTAATAAA CAATAGCGAT GTATTGAAGT GCGGACGCAG	2040

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CTAGGATAAA GAGATGCCAA ATCATGTGGA AATAAGGTTT TTTCTTGGCA TAAAATCCAG	2100
CTCCAACGTG ATAACAGAGT CCGCCAGTTA CCATGAGACT CCAGAAAACG GGTGTCGTTT	2160
GACTGATAAT GGCAGGAATG ATAGCCAGAA CCAACCAGCC CATAATCAGG TAAAGAGCAA	2220
GGCTAAATTT CTCATTGACC TTTTGTAGCA AGATTTTATA GAGAATACCA AAGATGGTCG	2280
TTCCCCATTG GATGACAATA ATCAGATAGC CAAACCAGTT ATTCATCAAG GTCAAGACAA	2340
CGGGCGTGTA TGAGCCGGCA ATGGCAACGT AAATCATAGA ATGGTCAATG ATTCGCAAAA	2400
CATATTTGTG GGTGCAACCA TAGGCCATAG AGTGATAAAT GGTGGATGAT AGGAACATGA	2460
GAAAGAGACT GATGACGAAA ATGGAAACGC CGATAGAGGA TAAAAATCCG TGTGCTTCAT	2520
AACTATAGAT GGATGAAATA GGCAGCAAGA TAAGCATGAT GACTGCACCC ACAGCATGGG	2580
TCACGCTATT AGCAATCTCC TCTCCAAAAC TGAGTTGTTT GCTGAGTTTA AGACTAGTGT	2640
TCATTGGATT ACCTCCTCTT GAGTATGATC GATTAAGTCT AGAGTTTGAT GATAGAGTTT	2700
AACGGTTTGG CAGCTGGTTT GGATAATAGG GTTAGCTGGG TCAATTCCTT GGTTTCATGTA	2760
GTCCACAAAA GCATCGTAGA GTTGGTCTGA ACTTGCTTGA GTTGTAGAG TATTAAGTGT	2820
CTGGGCTATT TCTTGAATAG AAAATACAGA CTTGAGGGTT GTGATAGCAA TCAAACGGGC	2880
AATCTGTTGG CGTTGGTATT TTTTGTGTC AGGCTTTGTC AGGTAACCAT TTTTCACATA	2940
ATTGTTGACC ATAGATGCTG TTAGGCCCTT GTCTTTATTA GGAGAGATAG GGGCGCAGAC	3000
CTGATTGACA	3010

(2) INFORMATION FOR SEQ ID NO: 26:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15213 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:

CATAAATCGG TGCAAATAAC TTAATAGTGA AGTAGCCATT TCTTTCGTAT TTACCTGAGG	60
CATATTCCTT AGACGAAAGA ATATTATTAT CAATCAAATC ATTGAATGAA CGTAGTCTTT	120
CAACTTCTTC TACTGTTAGA TTTCTGACAA CATTTGTTGC ATAGACCTTA TTTCCATCAG	180
GATCAGGATG GTACTCATTT GTAACCTTTC TAAGAAGTTG TTGTTTTTGA TTCGTATCCA	240
ATTTAAGAAT TGAATTTCCCT TCGAGATATT CCAACATATA AACAACGTCA AACATGTTGT	300
GGACATATTG CTTCAAATCA TCTGCATTAT TAAATCTTGT AGTTGGATCA AGTACTTGTA	360
ATCGTCGACT TTCTGTACTA TCAGATTTTG AATGTTTCAA GATGGAGTTG ATGGTAATGG	420

TCGCATCATC TGGATGGTCT GGTGCTTGTA ATAATCCTTT AGCAAAGAAC TCTGGTCCCA	480
AGCCACTTCT TCGACCATAT CCTCCAAGAT AAATGCCTG ATCTGAGTCA TGTGTCATCT	540
CATGCGTATA AGTAATAGCT CCATCCTTAT CCAACATTCTG ATAACCCATA TAATAAACTG	600
CATCACCTGT AGCATAAGCA CCGTGTGAT TATGCCCAAC TTTATTTCCA ACAGGTCCAA	660
AGAAATGTTG CATTGCAGGA TTTGGATTAT CAAAATCTGC CACTTCTGTA GCTTTCCTTA	720
CGGTATTATC ATCGCCAAAT TTATAAGCAT CGTAAAGCAA AATATTTCTA TAAAGTTTTT	780
CACGTGCATT GTCGTCTAAA ATACGATACC AATAATCGTA GTGATCTCGC TGACGTTTGG	840
CTGTTTCACG CGCATTTTCT TCAACAAAAT CATTGAGAGC CTTGCCCCGCT TTATGGTCAC	900
TACTGCGGTA GCGATCATAA GCTCCAAATC CTAGACTAGA CATGGTCGAG ATGACAAATA	960
CGGATCTCTC TGGCAAGGTC AGGAGAGGCA AGACCATATT GCGGTATTTT CATGTGGCAC	1020
TCGTGATACG ATCATAAACA CCGATAGAAT ACTTGGTGCC AGCTAACCCCT TGCTTCGTTT	1080
TCACCTCTTC GATAGTGGAT TTTTCTTCGA CAATGTAAGC CTTAGTCTCT GATTTAAACC	1140
AGTCATTATT GCTTGTATTT GGTA AAAAGA CTTTTCGGTA ATGTTCCAGC GTGCTAAACA	1200
AATCTGTCGT TCCATGTTGA CTGGCAAGAC TGATACCATA AGTATCGACA TTATTCTTAG	1260
CTAGAAGATT GTTAAAGCCA GATTTACCCA ACTCAATCAG AGTATCTAAT GGTGAAGCAT	1320
TCCCCTTACC AAAGAAGTCC AAATGGTACA GAACTAGGTC TTTGACATTC ACCTGACCAT	1380
AGCTAAAGTT ATACCACCGT TCCAGATAGG TCAAGCCAAG TAGCAAGGCT TCCTTGTTGC	1440
GTTTGATTTT ATCTACAAGA TAACCTTCAG TGACGGGGTT AGCACTAGCC AGTCCAGCAT	1500
CCGCTGACAA GAGTTTTTTC AAACGTCTT CCAGTTGTTG TTTTGTTTTG GCGAACTGGT	1560
CTTCTAGATA GAGCTCAGTT TGCTTGACGT TTGGAGAAAT ACCCAGCGTC TTTCTGATGG	1620
CTTCTGAATG ATAGTCAACC TTTTGTAAGT CAGGTAAGAC TTGCTTGATG ATAGAGGTTT	1680
GGTCATACAG GAATTGGTTT GCGGTATAGA GAAGTCCAGT ATTGCCCAGA CTATATTCTG	1740
CTAATTTGGC GAAATCATTC TGGTATTTGA GATCCAGCTT CTCAGATAAA TCATCCTTGT	1800
AGTGAAGCAA GAGTTTGTTC GCAGTCTGTT TGTTAGAAAC AATGTCTGTG ATGACTTGGT	1860
TGTCCTTCAT CATGACTGCT GACAAGAGTT CTTTTTGATA TAAAAGACTG TTCTCATTGA	1920
CCAGGTTTCC GTATTTGACG ATGGTTGCCT TGTGTAGAA AGGTAGCAAT TTTTCAATGT	1980
TTTTATAAGT CAAGTTGCGC TTAGCTTGAT AATAGGCCAC CTTAGAAAAA TCACTGTCTT	2040
TTTTGCCACT TGTGAAAGT GGCTCCACTG TTGGTAAAAT GAGAGGATTG ATTTCTGCTT	2100
TTTTGCTTGC AATTTGAGAA GCATCTAGCA TTGTTCTCTT TTCTTCAAAG GATTCCTTGC	2160

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TGACGACCTC ATCCTTGACC AAGGTGACAT TGTAGACTCT GTTGGCCTTG CTGCTGAATG	2220
TGTCCTTTAC CTTCAATTTCG TTATAGTGGT AACCAGTGAT GGCATTTCCG TTGGTTACAT	2280
TAACATCGCT GAGAACATTG GTCAAACTTC CAGCATGCCT AACATCACCA GAAGTTCGAT	2340
CCCACAAATT GCCTGCCACT CCAGCGACTC TACCAAAGTG CTTGACATTG TTGATATCAC	2400
CTTCAGCATA GCTATCTTGG ATCTGTGCAT CTCGGTCTAC TAGGCCTGCA AGTCCACCCA	2460
CAGTCTGATC TGAAGTATTT GTGTTAGATG AAATGGCTAC TGTGCTTTT GACTTAGTAA	2520
GTAAAGCCTT GTCACCTGTC AAATGACCGA CCATACCACC GATATTGTAG GCAGCAGTCG	2580
TTTCATAAGT GTTGATAATT CTTCCCTTGA AACTGCTCTC TGTGATGCTT GATTGCTCAG	2640
CCTTAGCCAG CAAACCACCG ATACCACGTT CACCAGCCAG AACACCATCG ACGTGAACCT	2700
GCTTAATTTT TGTGTTATTC TGAGCTTCAT TTGCCAGTGA ACCGATATCA TCTTCCCTG	2760
AAATAGCAAC ATTTTTTAGA CTCAGTTTTT CTACTGTAGC ACCACTCAAG TTTTCAAACA	2820
GAGGTTTTTT CAAATTATAG ATAGCATAAT TCTTGCCATC TTTTTCACCG ATTAAACGAC	2880
CAGTAAAGGT GTCCTTGATA TAGGATCTTT CATCAGGACC AAGCTCCACT TCGTTAGCAT	2940
TCAGGCTGGC CGCTAAATGA TAGGTTCCAG AGGGATTTTG GTTTATAGCT TTGACCAGAT	3000
TACTAAAGGA AGTAAAGTTT GTTGTTCCTT CTGTTCCCTT CTTAGCTAGA TAGAAGGTAA	3060
AATTATCTTT ATATCTGCTT TCTATCTCCT GCTGAAGCTT CTCTACTTTT GCTGTGATTT	3120
TATAAAGGAT TTTATCATTT TTTCTTTCCT CTGATATTGA TGCTACTGGT AGGTATACAT	3180
CTTTGAATGA AGAAGATTTT ACTTTAACAA AGTAGCTATT TGGATTGCTT GGAACCTGCT	3240
CTAACGAAAT GTGTTGTTTA TAAGTACCAT TTGACAACT GTATAACTCT AGGTCGGAAA	3300
CATTTCTTAA TTCAAGTGTT TTCTCTGGTT CTTCTACCTT TTTATCAGGG TCTAGTTCAT	3360
TTCTTGTTT AATTTCTTCG TTTCCATTG AATTGGATGT GTTTGATTCG GTTGAAACAT	3420
CCTCAGTTGA ATTTCCGTTT GATGGTTCTG GTTCTGTTTG TCCATTCTCT GATGTTGTAT	3480
TACCTGAATT TTCTGGTTTT GTTGCACTTC CGTTTTTTTC TGGTTGATTT GATTCTTCAA	3540
CTGGTGGTTT TGAATCACTA GGTATTATTG ATACTTCTCC AGTATTTTCG TTAGCTATTT	3600
TCCCAGAGTT TGTTTGTGTT TCTTCTGCAG GTTGAACCTG TTTTCTGTT TCTTGATTTG	3660
AGGTACCTTC TACTGTGCCT TCATTTGGAT TTACTGGAAC TTCTTCTACA GTTTTTCTG	3720
AATTTTCATT TTTAGAGTCA TTATGTTCTG GTTTATTTGA TTCTCCAACT GAGGTTGTCG	3780
AATCACTAGG ATTACTGGAC ACTTCCCCAG TATTTTGTCT AGATGTATCT GGTGATACTT	3840
TCTCTGAATT CGTTGTTGAT TCTTCTGCAG GTTGAACCTG ATTTTCTGCT TCTTGAATTG	3900
AGGTTCCCTC TGTAGTACCT TCATTTGGAT TTACTGGTGT TTCTTCTGTT GGTTTTACTG	3960

GAACTTCTTC AGTTTTTCTT GGACCTTGTT CTTTGGTCTT CTCAACCGGA GTTTCAGGTT	4020
TTACTTGCTC AATATTACCC TTATATTCTG GAAGCGGTGC TACCTGCTCT GGTTACACCTT	4080
TATCACTTAC CACAGTATCT GGCAGCTCTG GTTGAACCTC AGTCTCACCT TTGTCCGGTCA	4140
CAACTGCTTC GGGTAATGTA GGTGAACTT CTGGTTCGCC TTTGTCACTT ACTACAGCTT	4200
CGGGCAACTC AGGCTGAATT GCGGGTTCAA CAATAGCTCC AGACTGTACG TCCTTATGTT	4260
CTACACCAGT CTCAGGTGTT TCCTTTATAA CTTGAGTTT TTTAGTACCT TTTTCGACTA	4320
TTCTTGGAAT AGGCGCAGTC GTTGAAGTTG AAACAATTTC TCGCGAACT TCTTCCTTGT	4380
TTACAGAGAA TATTCTGACG ATTTCAACTT TCTTACCTAA TTTACCTTCT TGTTTTACTC	4440
TTACAGTTCC TTCAGCTAAA TCAGGATTTT CTTGAATTTC TTCTTGAAAA TCTATTTTGT	4500
TCTCCATAGT TTCCTCACGA TATAAGAGTT CAGGTTTGTT CAATTGACCT GATAAACTT	4560
CATCCTGTGG ATTTAATGTA TTTACCCAG TCTTTTCTTT TGGAGAAATC TTCTCCTCTT	4620
TCTTCGTTTC TAGATTCTTA TGTTCCGCTA ATTGTCTTGA AGAATCTGAA GATTGTTTCT	4680
CTTCTTTTCT TGGATTGATT AATTCAGTAG AGAAAGGTTT TTCAACTACT TGAACCTCTG	4740
TCGGCTTAGT TGAAGAAACA GGTGTTTGTT CCTGAATAGC TTGTACTGTT GATGGATGGT	4800
CTACAAAATT CGGTGTAACA TTATAATCCA CCTTTTGTG TTTTGTTAGGA GTGGCAACTG	4860
AACTCTTTTG ATTACTTACT TCAGACTCAG AAGTCGTTT TCCCTCTTTG ATATATCCAA	4920
TATAAGTGTA ACCTGAAATC TCTTTAGGAA GAGGTAATTT TTCTCCAGAG GTCAATTCAT	4980
AGTCCGTATT GTAATTTAGC AAAAGATGAT TTTCTAAAGC ATGGACTGAA ACTAAGACAC	5040
CATTTCTTAT CCCTGCAACC AATACTAAAT GTAATACCGT TTTATTCTTA ACCTTTTCT	5100
TGGAAACAGC AAAAATTAAA ATTCCCATAG CAGCTAAGCT AGCACCAGCA ACTAGGGCTT	5160
GCCTCTCATT CTTGCTTCCA GTATTTGGCA ATTCCGCCAG TTGATTTTGA GAATTTAACT	5220
TATAACAAG ATAATAAGTT TCATCATCAT TCTCCACGTA TGTCGGAATA TCATAGACAA	5280
GCTGCTTCTT TTCTTCTGAT GATAGCTCTG AATCTGCCAC ATATTTATAG TGAACCTCCG	5340
CAGTTTCTTG AGCATCCACA GATGAAGTAG CTAATACAGA CATAAAAAAT AAACCTGAAA	5400
TCGTTGCAGA TACAAGTCCT ACTGATAATT TTCTAAATGA AAAACGCTCT TGTTTTTCAC	5460
CAAAATACTT TTCCATTATT CCTCCTTGAA ATAAAATTTA TATATGTTAC AAAGACCTTT	5520
ATTATATTAG TGTATTATCT ATTATCTATA GAAAAGGCAG TATACCTTAA TTATACTCTT	5580
AATTTACAAA AAAGTCTTAA AATTGAGATG CGCTTTCATA CTTTGTTTTA TATTATTTGG	5640
AGGTACAATA ACACCTACCA TGAAATTTAC ACGGTAGGTG TTAATCATAT CACTAATCGT	5700

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TCTAAAAATG GTTTGAGGCA GTTGAGGAGA ATTCCCTTCTA TCCAGCTTCC TTGTGCTGAT	5760
GAGCGATGGT CTTCTGTCAG GCTTTTTTTT AGAAAATCTC GGACTTGTTC TGGTGCGATT	5820
TCAAATTCAA AGGCTTTCAT TTTATAGAAA AAGTCGATGA GATGATCTGA CAGGTATTCA	5880
GTTGAAAAGG GTACTTCACC ACTTTTTCTA TATTTCTAATA AGAGTCTAGA AAATCGAGCT	5940
TTTTCTTCAG GAAGCTCAGC AAAATAGGAA TTGAGGATCC AACTCTGCTT CTGTTTTCTT	6000
TCAATTGGAT CCTGACTGGC AATTCGTTGG TCTTTTTCCA GCTCTTTTG GTATTGTTG	6060
GCCTTGATAG CTCGTTCTGC TCTATTTTTA CCAAAAAGAA TTTTTTCCA CTGCGTTCT	6120
TCTTGAGTCA GGGTCTCTGT AAAGCCAAAG TAATCTTGAT AAGCACGCTC TGCGGGTCCC	6180
ATGGCTAGAA CCAGATTGTC TGCATATTGC TTGGCGATTT TATCCCTCTT CTGCGTTCT	6240
TTCTCTGCCT GGATACGGAG TTCTTGTTCTG TAGTCAATTT TCTCCTTGCC TAGCTTGACA	6300
AGGTAGAGTT GGTATCCGA TTTCCCAAGT AAAAAGGGTT TGATACACTT TTCAAGGACT	6360
TCTTCCATCC GAGCCTTTTT CTTTGGTTCC GCCTTGGTCC AACTTCCTCC CTGAAAGACT	6420
TCTAGAAAA GCTGGTAGTC TCTCTCAGGC GCAAAATGAT TGCCACGATT GGGTTTGAAA	6480
ACACCTTTTT CCCAGAGCCA TTTTAGAAGT CGCTCGTCAA AGTTACTTTT ATTGACCTTG	6540
ATTTTTTCCT TTTTCTGAGC TTTTCTGGTT AGATTTTCAA CCTTCTGAG CAGTTTTCT	6600
TCCTCTTCCA ATTGCTGGTC AAGGGACAAT CGATGAAAAT GACGAACACA GTCGCTACCA	6660
ATTGGAAAGA GGCCTTGGCC TGTGACACCG TTAAAGAGTT CATAAGCGTA TTTGATGGCA	6720
TTTCCACAGA CACAATTGCT ACGGCCGATA CCGTTAAAAA TAAAGGAAAC TTCATTCCAT	6780
TCCTTGGTAG CTTGTTCCCA AGTATCCGCT TTCGAAGCCT GTAAACTGC ATCGTCAGG	6840
GATTTTCTAA CTGGAAGTGT CATGAGGTCT CCTTTCTAAT ACTCAATAAA AATCAAAGAG	6900
CAAACCTAGAA AGCTAGCCGC AATCAGCTCA AAACACTGTT TTGAGGTTGT AGATAGAACT	6960
GACGAAGTCA GCTCAAAACA CTGTTTTGAG GTTGTGGATA GAACTGACGA AGTCAGTAAC	7020
CATATATACA GCAAGGCGAA GCTGACGTGG TTTGAAGAGA TTTTCAAAGA GTATAAGTTA	7080
TACTTTTACA ACTGAACTT CGTCTTTACC GAGTAAATC AAGTATTTTT CAATATTTTC	7140
AATCGAATAG GCTCGTGATA AAGCCTCTTC GTATAGAGCT AACTGACCAC GATAGCGGTC	7200
TACGAGTTGA CTTGGTTCAT CATAGCGGTC TGTCTGTAG TCGAACAGAA CAATTTTGT	7260
TTTCGTAAAGC AGATAGCCAT CAAGGATACC ACGGACAACA AAGTCTTCCT GACTCTTTTG	7320
GTCTCGTTTG AGCATGGAGA AAGGTTGCTC GCGATAAAGA TGGTCGGTAT TAGCAAGAAT	7380
TTCTGACCG AGTACTGTGT CAAAGAAAGC AAGAATTTTA TCAAGATTGA TCTTGTCTCT	7440
GACAGCTTGG CTAGTTTGAA CTGTTTGAG TGTCTGTGTT AGGCTAGCAA GGGTTAGTTG	7500

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CTGGCTGAGG TCAATTCTCT GCATGAGTTC GTGAGTAGCA CTACCAATCT CAGCTCCAGT	7560
TACCTTTTCT TTGGTTGAAA AATCTGGCAA ATCGAAGCTG ATTTTCTTGC CTA CTGACTG	7620
ACCTTGACCA GCAATCTCGA CACCTTCCAT ATCCATAACT GGTTCGTAGA ATTTCTTGAT	7680
TTGACTTGGG GTTTGAACAC TAGGAAGTTC AATAGCTGCG CCGTGAAGAG TATTATAAAC	7740
TTCCACCTCC TTCAGCATTT CCAGAGCTTC TTTGATGGTA TCTGACTGAC GATTGTCTGC	7800
TTGGGAGCTA TCTTGAGAG GACTCTTGGT TTCCAACCTCT CCGATAGCTT CTCTGGTCAA	7860
CTGATCTTCG CCAATAAAAC GATAACTAAA GTTGAGCTTG TCCTTAGTAA AACTTTTACT	7920
GATAGCCCAA AGCCAATCTT GGAAATCCG TGCTTGCAGT CTAGTATTGC TATTTAGTTT	7980
CCCATTTTTG GCTGCTGGGT ATTCCTTGA TTCCAGCTTT TCACGAGAAC CCTTGCCGAC	8040
AAGATAGAGC TTTTCTCAG CCCGCGTCAT AGCAACATAC AGCAAACGCA TCTGCTCAGA	8100
ATAGCTTGCT AGCTGTAATT CCTCTTCGTT CTGCCCTATAG GTCAGACTAG GAATGGAGAG	8160
TTTGATGGTT TTAGGATAGT GGTCTTCTAC TGCCCTGTC TCCATCTTGG CAATATATTT	8220
GACACCAAGA CCATTCTGAC GACTGAGAAT GACTTCTGAC ATAGAGTCTT GCTTGTGAA	8280
ATCTTGATCC ATATTGAGGA TAAAGACGTA AGGAAACTCC AGCCCTTTAC TCTTGTGGAT	8340
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GGCTTCTAAG ACTTGGTCAA TCATACGAAT AAAACGCGAC AAACCTTTGA AATTGCTCTT	8460
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TAGTTTTTCA GCTAGAGCTG TGTGAATCAA GCCTTTTGA CTACTTGCCA TTTTTTGTGC	8700
ATTGACCAGT TTCTCATAGA GATTTTCGTG GATTTTATCC TCTGCTTTCT GAAGGGACAA	8760
ACGTGCTAGC TCATCCTCAT CAAAACCAA CATTGGAGAC TTCATAAGGG CAACCAAGGC	8820
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GGATTGGAGA TAATTGTTTT GCTCTCCGTC AGTTTGTACA GGAATTCCGT ACTCAGACAG	8940
GGCGAGGAGA ATCTGGTCAT TACGACTGCG GCTGGAGGTC AGAAGGGCAA TTTCCTTAAA	9000
GGCAACACCT TTTTCTTGAT GAAGTTTCAG AATCTCCTTG ATA ACTAAGC GCATTTCGCC	9060
TGTTAGTTTC GTTTCTGTTT GACTCTCTTC TTCTCACCT GTATCGTCCT TGTCGTAGAG	9120
GAGAAATGCT GCCTTGTTGT CTGGATTGGG AGTCAGTTTG GTATTGGCAA AAACAAGCTG	9180
GTGCTTGTTA TCATAGTTGA TTTCGCCGAC CTCTTGGTCC ATGAGACGTT CAAAGACATC	9240

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ATTGGTTGCT GACAGCACTT CTGAACTACT ACGGAAATTT TCCTTGAGGA TAATGAGCCT	9300
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CTGACGGAAG CGATAGATGG ATTGCTTGAT ATCTCCCACC ATAAAGCGAT TGTGGCCATT	9420
AGACAACAAT TCCAGCATCC GTTCTTGAAT ATGGTTGGTA TCCTGATACT CATCGACCAT	9480
GACTTCATGG AAGCGCTCCT GATAAGACTC ACGAACTTGT GGGAAATTCT CTAATATCTC	9540
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GCCAACTGGC GACCCAAGTG TTGTTTGAGG TCGACATCAT CTGTTTCTTG GATTTTCTTG	10440
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ATAAAGAGTT GAGAAATTTT GACACCACGC GCCAATTGGT CCAGAATGCG CTCTGCCATG	10560
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ATAGCTTCGA TTTGCTCGGC AGTTTCTTTC TGTTCTTGC TCGAATTTGC TTCTGCTTCT	10680
TGCAGTTTTT GAATCTCCTC CTCACCTAAA AAGGGAATAA GCTTCATCGA TTCAACTCCT	10740
CTCTTATTTT TTCAAGCCAA GCTTGCTTGA GTTTTCTCC GACCAGACGC TTGCCATCAG	10800
CTAGGTCCAA CTTTCTTAGG AAACGGGCTT GGCCAGATG GTAATTGGCT TCAAAGCCTG	10860
TAATAGCCTG ATGTTGCTGG ACGTATGGGG CAATGCTTCT GCCATTTTCA GTATAAGGAT	10920
TGATGGCGAA CCGGCTGCT AAAATCTTCT CAGCAGCTTT CTTGTAAAGA TAGGCATTGT	10980
AGTCCAGTAG GAGCTGAAAT TCCTCATCTG TCAGTTGATT AGCCTTGTTT TTGTTATAAA	11040

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TGGCTTCTAC CACTGCTCCT GCCAGACTTT TTACCGCCAT CAGAGATTGG ACAGGTTCAG	11160
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GATAGGTTGG TAACTGAGAA TTGAGCCCAT TAAAGAAATG AGGAACTGG AACTGAGTCA	11280
GACTGGATTT GTAGTCTACT ACTCCTATCG CTCCATTAGC TTTCAAACGG TCAATCCGGT	11340
CCACCTTGCC TCGTACAAAG ACACTGCGTC CATTGTCTAA TTGAATAAAG GCTTGGTCTT	11400
TTCCACCAAA ATTTGCTTCT TCTTTGATGG TTTCGATGGC TGGATTGTGT CGGAGAATAT	11460
GTCCAGTTGT CCGTGCAACA TCAAGCAAAA CTTCTTGGT AAACGGGGCT TCCAACTTT	11520
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AAAACCTCTG TTTGGCAGGA TAGAGAGCTT GCAAGGTGTC CTTGGCTAAG GTCTTGCTGC	11820
TTGGACTGGT TGGGATAGCT GGATTTTCCA GACCTTGCTG ATCTAGTTTT TTACCTATGA	11880
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GGTGATAGGC AACCAGACTA GACAAAAGAC TGTGATAGGA CCCCATATCC TCCTTAGACA	12000
GTCCTTTGTG ATTCATCCTC TTCTCTCTCC GCCTAAATCC AAAATGGATC AACTCTTGAA	12060
GATAGGCAGA TTCCTTACTT TCATTTCGT TAAAAAGGCT TGGAGCCGAC AAGAACAAC	12120
GCTTACGAGC AGAATTGACC AAGGAAAGCA TAGGTAGCG ATTTTCTTG AGATTTTCAC	12180
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TTCTCAGCG GAGGACATTC AAACGCTCAA GATTAAATTT TCCATGGTGG GATTGGTGA	12720
AGGTTTGCTG AAAGGCTGGC AAGCCATTGA TACCAAGATA GCGGATATAT TGCTCAAAAG	12780

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CATCAATATC AGACTGACTG AGGTCAGTAT ACAAATCAGT TCTAAGAAGA TTAATCAAAT	12840
CCTCCTGACG AAAACGGTAA CGTTTAAAG CTAAAATAGA CTCGACAAAC TGAGTCAAGG	12900
GATGATGAGC CATGGCTTCG CTTCTACCAA GATAAAAAGG AATCTGATAC TGGTCAAAAA	12960
TGGTTTGTAG AGATAACTGG TAAGAAGCTA CATCCCCCAA GAGAATACGA AAATGCTTGT	13020
AGCTCAGGTC TGAGTTCTCA TGTAATTTCT GACGAATACT ACGGGCTACT AGCTCCAACT	13080
CCTCCTTTTG CGTCAAACAA GACCAGATTT GTAAATTTTC ACGGTCTTTC TCATCGACAT	13140
CCAAAGCGAG TTCTGAAAAG TCATAAGAAG ACTCCAACAA ACGAGAGGCC TTGTCAAAAC	13200
TATCCATCTT CTCATGAGTT TGAGAACAGT CCTGAGCAGG CGTTTGGTAT TTAGAAGCCA	13260
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AATCCGCCCT CTTATCCTCA TCTGTAAAT TCTCCAAGTC CAAAAAATC ATCTGAGATT	13620
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CGCCATAAAC ACGCAAGTCC TTGGGATCGA GTTCGGCAAG GCATTTGTA AAGGCCAACC	13740
CAAGACCGAT ATCATCAAGA GTAGTTTTCG CTGGTAAATC ATTCAAGACC AGATAGCGAG	13800
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CAGTATAAAG TAATTTTCATC TCAGCCTCGT TGGAATTTTT CATCACCTTA TATTATACCA	14040
TGATTAGCCT CGTAAATCTG TTAAATATT TAGGCCATCC TTTCTTTTCT TCATCATCTG	14100
CTAAATCTTA AATACTTAGC TTTACTTGTA TTAGATAGAA TAAGTCTGGC TACTGAAAAT	14160
CACATAATAA AAAAGCCTCG GTAACAAGGC TTTGAGTTTT ATGATTGTTT CTTAGGTACG	14220
GAATACACTT CAATGTGTG TCCCAGTATC TTAATGTCGA CTGGTAGATT GTCTGATTTA	14280
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TCTTATGGCA TATTCAATAG ATTTTCGTAA AAAAGTTCTC TCTTATTGTG AGCGAACAGG	14580

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TAGTATAACA GAAGCATCAC ACGTTTTCCA AATCTCACGT AATACCATTT ATGGCTGGTT	14640
AAAGCTAAAA GAGAAAACAG GAGAGCTAAA CCACCAAGTA AAAGGAACAA AACCAAGAAA	14700
AGTTGATAGA GATAGACTTA AAAACTATCT TACTGACAAT CCAGATGCTT ATTTGACTGA	14760
AATAGCTTCT GACTTTGGCT GTCATCCAAC TACCATCCAC TATGCGCTCA AAGCTATGGG	14820
CTACACTCGA AAAAAAGAAC CACACCTACT ATGAACAAGA CCCAGAAAAA GTAGCCTTAT	14880
TTCTTAAGAA TTTTAATAGT TTAAAGCACC TAGCACCTGT TTAGATTGAC GAAACAGGAT	14940
TCGATACTTA TTTTATCGA GAATATGGTC GCTCATTAAA AGGTCAGTTA ATAAGAGGCA	15000
AAGTATCTGG AAGAAGATAT CAGAGGATTT CTTTGGTTGC AGGTCTAACA AATGGTGAAT	15060
TAATCGCTCC AATGACTTAC GAAGAGACGA TGACGAGCGA CTTTTTTGAA GCTTGGTTTC	15120
AGAAGTTTCT CTTACCAACA TTAACCACAC CATCGGTTAT TATAGTAAAA TGAAATAAGA	15180
ATAGGGGGGG GGGGGGAGGG GGGGGGAGGG AGA	15213

(2) INFORMATION FOR SEQ ID NO: 27:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 6004 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:

TTATTACCTG AACATTAAA TTTAATTGGA CATCCCGTTA TCAATTTTAT AATATCATCA	60
AGATTTTAT TATCTGATTC AGGAATTTTA TCTGATATAA CAACACCATT TTCAAGATAG	120
TTCATTAAAT TATTTGATTC ACTAACATTA GTGTTTGTAT CTCCATCAAG CCAAAAATAA	180
TGTTATCGG AATCTAAATA CGATGAGTTT AAAATATTAT TACAAATTAT TTGATTTGCT	240
CCACCAGGAA TATATCTCAC TACTAAATTC TGTTTAAGAT TCTCACTACC TGAATGAGTG	300
ATAACAACT CTAGAATATA TTTAGCTAGT CTATCTTCAA CATAAATCAT CTTCTAGAA	360
TGATACACAT CACCTAATTC AAAAAATGCA TCCTGATAAT CAATATTTTC AATAACATCT	420
ACCTTTTCTC CGTTTTTCAC TAAAAGTTTC ACGGCTTCTC TAGGAAAATC TTTTATAAGT	480
TGTGTAGAAT GTGTAGTGAT AATAATTGA TGTTTTTTAT TTAAACACTC TTGAAGTAAA	540
AACCTTTTAA ATTTATAGAT TGCACTCGGA TGAAGTGAGA TTTCAGGTTT ATCTATTAAT	600
ATTAATGAAT TTGATTGCGC ATTTACTATA TCATTTACTA ACAAATAAT TCTAGCCTCA	660
CCTGTTCTCG CAAAAGCCTC GGAATATTCT TTTCCAGATT TTTTCATCCA AATAGTTTTC	720

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GAAGCTTTTA TATCATCACC TTTTGAATAC AACCTATGTG TTAAAATTG AATGTCTGTA	780
TAAGATTCAT CCATTATTTT ACTAATAATT TCACAACTT TATCATCAAC TTTAACATTA	840
TCTATAACCA TTCCTTTTT ATAACGCGTA TAGCTACTTG TATTATTCTT TAAAATATCA	900
GCAACTGGCT TAGATCGTAA TCTTATAAAA TCTTGTTTAC TACGTTGAGT AGAAATTTTT	960
TTAAAATTAT AGTGATAGAA AAATAAATCA AAAGCAGAAA CATATTCTTT ACAATCACAA	1020
AAGACAACAT TTTTTCAAT GCCATCCCAT CTGTCTGTCG AAGAACTTCC AATATATTTA	1080
TTTTTGGGTA ATCTTTCCAT CTCATATTGT TTTTGAGGAG CATATGGTTC CCAATAATCT	1140
AATCCTTTTT TTGTTCCAGA ACGGCCTTTA AGAACTTCTA CATTTCTAGA AGCTTTAATG	1200
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GTAATAAACC AATATTCAGA CACACTTTTA TTGGCTGGAG AACCATATAA AGCTTGTAAG	1320
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TTTTAACAGC TACGGAATCA ATTTCAACAG CAACTTGAAC ATCTATGCCT GATTTTTTAA	1440
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AGGGTTAGGT TTTTAACATC ATTTACCAA CTCTTCATC TCATCAATAC GTGCGACGGT	1620
CGCGTCATAT TTAGCTTGGT AGTCAGCTTG TTTGTCGCAT TCTTTTGGGA CGACTTCTGG	1680
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GGCCAGTGGC AGGTAGATTT CTGCTCCTGT GATGACACTT GACATAGCCA GTTCAGGTGC	1860
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ATTGCTGTTA AAGAAGGCTT CCAAGTCGCT ATCGCTTGTC TTAACAAGGA TGGTGATAGG	1980
CTTGCTTGGT GCTACATTTA CTCCGCACG CGCATTCGA ACAGCACGAA TCAAGTCTTT	2040
GAGACTTTCC ACACCACTGT GAGCCGCAAG GTCTTCAAAG GCTAGATTAA CAGTTGGGTA	2100
TGCAGCTGTC ACGATAGAAC CTCTGAGAT TTGTCAAAG ATTTCTCTG TCACGAATGG	2160
CATGATTGGG TGAAGGAGAC GAAGGATCTT GTCCAGCGTA TAGAGGAGAA CAGATCGAGT	2220
AATGACCTTA TCGTCTTCAT TGTCGCTGTA TAGAACTTCC TTGGTCAACT CAACATACCA	2280
GTTGGCAAAT TCTTCCCAGA TGAAGTTGTA AAGGATATGA CCAGCCACAC CAAACTCGAA	2340
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GTCCGTCACA TTACCAGCCT CACCTGTTGC AACTTTGTG ACATTGTCAT GCGCCACATC	2460
CAGCGTCAAA CCTTCATTGT TCATGAGGAT ATAGCGAGAA ATGTTCCAAA TTTTGTTAAT	2520

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TTCTTCGCCG ACATACATTT CACCATCAGC ATTGTACCAG GCAGGGATTT GGTGACCCCA	3000
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AGGCTTGAAA ACATCCGCAT CAAGCCATTT TTGGTAACGA CCAGCCTCAA CCTCGGCTGG	4200
ATTGTATTTA GGTGAAAGTT CTTTAGACAT GTGTGTGTCC TTTCTCTATT TTGTTTATTT	4260

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TATTTTGAAT TTGCTTAGCA GCTTCTTCTG CAGACAAATT CGTATTATTT ATTTTAAAGT	4320
AGTGGTGCAA CTCATTCGGT TGATGTTGGG AATTAAATTG AAGTGTTTCA GCGGTCTCTA	4380
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TCAAATCACC TCCCCTCAC TCCTCAGCAA GCCATATCTC AAATCATCAC AGCAGTTGCC	4860
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CTTGACTGGA GGAAACCTG CTGGATAGGC GACCTCTGGC AAATAGCGT AGGTATGGAT	5280
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GACAATCTAA AACAAGTGA CAGGCGTCTA AAATAGGAGT CTGAGTTCGT TCAGAAATTT	5640
CATAATGCAC TCCCAAACGT TCCAATTTCT CCTGATGACT GATAAAACCA GCCTGCTCCA	5700
TCGCAAGCAT AGAAGTTTCA TCAGAAATAT TCACAGTAAA TTTTGTGATC TGTTTGATCT	5760
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AGGAACTACA GGTGCTGATG TTATAGCCAA AATTCTAATC TTGATATCCT AAAATAAAAA	5880
CAGGAAAACC ATAATATAGT TTAATGTGTG TAAAAGATTG CTTTATAACA ACCCCCTTTG	5940
ACTAAGACGT AAAAGAAAAG CCCTGCCATC TACATGACAG GGACGAATGT GTTTATCCGC	6000
GGGG	6004

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(2) INFORMATION FOR SEQ ID NO: 28:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 5857 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 28:

TGTAGAATTC ACGACAATGC TTCGTTGATT TCTGGGTTGA TTTCGTCGCG TTCTGGCAAG	60
CGAGTCAATG AACCAAAAAT AGTACACAAT GTGGTATAAT CCTTTTATGG CATATTCAAT	120
AGATTTTCGT AAAAAAGTTC TCTCTTATTG TGAGCGAACA GGTAGTATAA CAGAAGCATC	180
ACACGTTTTTC CAAATCTCAC GTAATACCAT TTATGGCTGG TTAAAGCTAA AAGAGAAAAC	240
AGGAGAGCTA AACCACCAAG TAAAAGGAAC AAAACCAAGA AAAGTTGATA GAGATAGACT	300
TAAAAACTAT CTTACTGACA ATCCAGATGC TTATTTGACT GAAATAGCTT CTGACTTTGG	360
CTGTCAATCCA ACTACCATCC ACTATGCGCT CAAAGCTATG GGCTACACTC GAAAAAGAA	420
CCACACCTAC TATGAACAAG ACCCAGAAAA AGTAGCCTTA TTTCTTAAGA ATTTTAATAG	480
TTTAAAGCAC CTAACACCTG TTTAGATTGA CGAACAGGA TTCGATACTT ATTTTATCG	540
AGAATATGGT CGCTCATTAA AAGGTCAGTT AATAAGAGGC AAAGTATCTG GAAGAAGATA	600
TCAGAGGATT TCTTTGGTTG CAGGTCTAAC AAATGGTGAG TTAATCGCTC CAATGACTTA	660
CGAAGAGACG ATGACGAGCG ACTTTTTTGA AGCTTGCTTT CAGAAGTTTC TCTTACCAAC	720
ATTAACCACA CCATCGGTTA TTATTATGGA TAATGCAAGA TTCCATAGAA TGGGGAAGCT	780
AGAACTCTTG TGTGAAGAGT TTGGGTATAA ACTTTTACCT CTTCTCCCT ACTCACCTGA	840
GTACAATCCT ATTGAGAAAA CATGGGCTCA TATCAAAAAG CACCTCAAAA AGGTATTACC	900
AAGTTGCAAT ACCTTTTATG AGGCTTTTTT GTCTTGTTCT TGTTCATT GACTATATAA	960
ATTGTCTAAG CGAAACAACC GATAAGAATT GGCACAAAAG CGACCGTATT TTTGTTACCA	1020
ATACAGGAAA AACAGTTCAT AGTTCTATCT TGAGCAAGTC TCTCCAGCGA GCAAACGAAC	1080
GCCTTAAAAA ACCAATTCCC AAACATCTGT CCCCTCACAT CTTCAGACAC ACCACTATTA	1140
GCATCTTATC AGAAAAATAA ATTCTTTTAA AAACAATCAC GGACAGGGTT GGTATCCCCG	1200
ACTCTGAAGT CACTACTTCC ATCTACACCC ACGTCACAAA GAACATGAAA GATGAAGCAA	1260
TCAATGTACT GGATAAAGTT ATGAAAAAGA TTTTAAAAA AGTTTGTGCC CTTTTTGCC	1320
CTCTAAATAC AAAAATAGCC CTTCCGATAA AATCCGAGGG GCTAGAAACG TTGTTAAATC	1380

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AACGGCCGAA CTTTGAATT TCATGGTTCG GGATAAAATA GTTCACTGAA CTATTTTATT	1440
TTTAAAGGTT ATCATAATAT CAAATAGTTC AATTAAATAC GCTAAATTAC TAATATACTT	1500
TTTACCTTTT TCATTCTAAA ATGTAAAGTA CAAACAATTA CAATATACTA GAGGGGGAGT	1560
AAAAAAGGTA TTAAATCGAT GAGTTCAGCA GGCAAGAAAA TAGCACCTTT ACGGGTGCTA	1620
TTTTTTAATT AACGCCACGT TAACTTTTGA TTGATGAATT TTATTGTTTG GCACCTTCTT	1680
CATTTACCGG TAAACATCGA TGAAATTCCT TCCAACATTA TTTTGGAGT TAACTGCATT	1740
TATTTTGTGA TTAATAACTT TTTTAGTATC GAAAGAATGG TTTAAGAAAT CCATAACTAA	1800
CTCTCCTTTC TCATCCTGTA ATCAAGATTT TTATCAATGT CAAAATAGTA TTTTCTATCA	1860
ATCCAAATTG GTCCTTCTCC TTTAGAAAATA GCAAGTACAT CTACCGGACC TCCTACTGTT	1920
TCAAGAGTGT TGACAATTTT TCTCTTAAAT GAAGTTAATT CAATAAATGT TTTAGCTGTA	1980
CTCGCCATTT CATTAAGTGG TTGCATTCCA ATAAGGTCTA TTATAGGATT TATATAATAT	2040
TTTGTCTGTA TAGATGATAT ATTTTCAAAT ATATTCTCAA TTTCATCACC CAATCCATTT	2100
TTCTCCATAA CTGATGATAC TTGCTCTGCG ATATATACAT TTAAGTTAGG ATCTATACCA	2160
TTCATAATCG TCTCAACCAT CTCTGACTGT GCAAAAGGGA TTATATGACA AGTTTTATGA	2220
TGATTTATCA CACTTTCATT AATAACTTTC CAAATTAATC GTTTAGAAAA AATTCCATAT	2280
AATTCAATTT GTCTTATAGA TGGAAATATC TCGTCTGTAC CATAACCTGC TATAACTAAT	2340
CCAGTTATGT TTGTTGAGTC ATATCCAATG AAAATCGCTT TATATAAAGA TTTAGCAATA	2400
ACTTCAACCT CATCATCAGT ATGAGGAAAG GATTTAAAAA CATCGTCTAC AATGCTTTTT	2460
ATTAACCTA ACTCAGCTTC AAAAAATTCA AAATTACTTT CAGCTTCTAC TTTTGAAATT	2520
TCTAAACTAA AATTAGTTAT AGCATTTAAT AAAATTTTAT TAAAATCATC TAGAGTGATG	2580
GTTTCACCAT TAGAACTCT TAAATCAGCT GTTCTTGCG CTTCATAGGC AATGCTGTCC	2640
AAAATACTTC TTGTACTTCT GACAATATAA TTTCTTAATA AATCCTCAAC TTGTAGATGT	2700
TTAAAGGAAA TTAAAAATTC TATTAGCTTT TCAACGTATT GGGCAGTATT ATCTAATAAA	2760
TCTGTGCCAA TAGCCTGCTT AAACCTATTT AAAATTACCT CCCACGGAAT TTCCATAAAC	2820
GAAGCGTTC CATATATCAT GATCCCCACG GAATGTTCTT TTGATAAAGT GAATAATTTT	2880
CGGGCGCTAT TAAAACTTT TGAATTTTTC CCGTCTGATA AGGTTACAGC GCTATCAGAA	2940
GCCAATACAA CACCATTTTT ATTTAATATT CCAATTTCTG CTGTCAAAAT ATCACCTAAA	3000
CTTTCTAAAC CTGCTCATGC TCTAATGGTA CAACAGCTAA GGTCTTACCA AGACTTGCCA	3060
ACACTTTTAA TACTGTATCA AGTTGTGGGC TTGTCTTTCC TGTTTCCATT CTAGCGATAA	3120
CTGGCTGACT AACACCGCTC ATCTCCTCTA GTTCTTCTG ACTAATACCC TTTTCATTTT	3180

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TAGCCTCGAT AAGCTCACTC ATGATAGCCA CGCGCATATC ACTTTCCAAA ATTTCTCTCTT	3240
TGCTGAATAA TTCAGCTCTT ACATCTTTCC AGTTACTACC AATAGCATT A TTTTTCATTG	3300
TCTAAACCTC TTTCTTTTAA ATCTGCAAGT TCACGTTTAG CTTGCTCAAT CTCTCTTTTG	3360
GGTGTTTTCT GTGTCCTTTT CATAAAATGA TGCAGTAAAA CAAACTACC ATCCATCCAA	3420
GCAACAAATA AAATTCTATC TCTAAGTGGT CTCAGCTCCC AAATTCAGC ATCTAAATGC	3480
TTAATATATG GTTCGCCTGC GCGTGTCCA TGTGGCTTA ACAACTCAAT ATAATCATTA	3540
ATTTTATTAA GCTTAATCTT GCTATCTTTC CCTTTTAC TGGTAAGCTC TCGCATATAA	3600
TCAAAAACAG GCTCATTGCC GTTTTATCC TTGTAAAAAT AGATATTATG CACTATTAAC	3660
ACCTCTTCCT AATAACAATT ATAACCTAAA AGTTATTGTT TGTAAATACT TTAAAGTTAT	3720
TAAAAATAAA AGCACCTAGT TTCCTAGATG CTAGCACAAT GACACGGATT CGCACCGTGG	3780
CTACCTCTAT CAAGGTGTAC TCCTTCTATA CTATCCCTTG TGCTTTAGAA TATTATACCA	3840
CACAAATCAAC TAGATACCTA CCATCTCATG ATATACCCCC ATTTTGGGCA AGGGTACAAC	3900
GCTAAAATAC AAATCAGAAT AGATATTAAA CCACTTATTT AACTTATCAT AAGCTGGTGA	3960
TTGACTGATA AATAATATCC GCTGACAAGC TCCGATAACA TTCATGTGAT TGTACACATA	4020
AACCTCTTTT ACAGCCTCTA AAATGTCAGC CTCACTTGT TGTACCCTAA TATCTGTTAT	4080
CTGCTTGATA GTTGCCTATT TTTGATAAGC TAGCATATCT TGATTTT TAG CAGCATCAAA	4140
CATTTTACGC TCAAGGACAC TATACTTAGG TTGTTCTTTA TCTCGCATGA AATACCACTT	4200
GAGCCATAAA ATCTTTTCTC GGTGTATTAC AGAAATACGC TCAATTTTCT TCTTTGTCAT	4260
TGCTACCTCC TAAATCATCA ATTTAACAAT TCTAACCACT CACTTTTAGA AATAGTTGCA	4320
TAGATCTTGT TCGATGTATG ATACAAAGGT TCTAAATCTT TTTCCACCCT AATATAGTTC	4380
ATCTTATCCT CATGAGTAGG AAAGTATAGT ATTTCCGTTT CATCCTCGTT TAGGATACGA	4440
TTGCACCAAT CATCAATAAT AACTGGCACT TCCCCTCAC GCCATTTTTT AAGGTTTTCT	4500
AAAAGTTCAT TATCACTAAA TAGCTCGCCA TCTATTGGA AAAATCCCC TAAGTCATTG	4560
TTTCCTTCAA CAATAATAAA CTCTGGCATA TTTCTATTAC TTAATAACTC CTTGAGTTCT	4620
TGTAACCTTT TGATTTCTT TAGATACTTC CTCAATTTCC AACCTCAATT CTTCAATCTG	4680
CCTTACTACT CCAAAAATTT CATGGGTCTT ATAAGATTGT TCAAGTATAG CCTTTGCTGC	4740
TTGAGTTCTT ATAAACGGGT TGACCTTACT GTCCATCATA ATATCATTGA GTACAGAAAC	4800
AGCGTTAGAT GATGCTAAAT AAAGCATTTG AGTTGTTT TCCATCATCT CATCTTGCTT	4860
TATCCTCAAT GTCTTTTAA CCGCTGCAAC TTTTAGATAC TTATGACCTG TTGCGCGTGA	4920

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TACCCCTGCT TTTTGACATG CTTTGTCTAT CGTTGGCTCG GTAAGCATGG CATCTATGAA	4980
TTTAATTTGC TTGGACGTAA GGTATCATT TTCATTCCT GCCATCTATT ACCTCCTCAT	5040
TATCAAAATA AAGGGTTGCC CCTTTATTTC CCTATGCTAG ATAATTCTGC AATTCTGCAT	5100
CCATTGCCTC TGAATGCCC TCAACAATCA TTTCATGCTG TACTAAATCA ATCTTATCTC	5160
CGTTAATAAG TAAACCACCG TGGAAATAAT CAATTTTCT ATCAAGGAAA TGTACTAGCT	5220
TTTCAAGGCG TTGCTGTTGG CTGAATTGCT CCATGTCAAT TTCGATATAA GCAAGGGTAG	5280
TATCATATC CATAATATCT TCTAATTTTC TAAGAGCTAG AGGTTTATTT TTATATTTTT	5340
CTAGGTATTC TCTCATTTCT GCCACTGTTA ATTTGATACT AGATAATAAA CTTAGTTCAG	5400
CTGCATCATC TGCTGTAATA GGCTCTTCTT TTGATTCATG GTTTGCTAGT TCAGCATTTT	5460
TCTCTTTTTC TAGTTGCTGA TACAATAGCT GAGCAGTATT TTGGGAATAG TTTTCGCCCT	5520
CTTTTTTATA TTTTAAAAGT TCTTGCTCTG CATACTTTT CCCGATAATC ACTTCCTTAT	5580
AAACTAATTG CCCATCTTGA GCTTTTAGCT TAATACTCCC ATGCTCTGGA ATTTCAATAT	5640
ACTTAATTAT ACCATTTTTT GAGTATAAAA CAAAGCCTTT CTCCATCATT TTTAATAATT	5700
TATCATCCTT GTTTTCAGTC ATGCTTTTCT CCTTTATTTC ATTTTATTAT AATCTGAATA	5760
CCCCTAGTCT ATTTATTTCA CTAGGTTTTT AGGGTTCGTA TGCTAAAATA CTACCCTTTT	5820
TGTGTACCTT ATGGCTGACT TTTCAAATTG GTTAGTT	5857

(2) INFORMATION FOR SEQ ID NO: 29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10254 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29:

AAAATGATAG CAGGAGAGTT TTCCCGTCCA TCAGACCCAG AACTGAGAGC CTTAGCTCAG	60
GCTTCTCGCC AAAACAGGC CGCCTTTAAC AAGGAAGAGA ACCCCTTGAA GGGAGCCGAA	120
ATCATCAAGA CTTGGTTTGC CTCAACCGG AAAAATCTTT ACATCAACAC TCGCTTGATG	180
GTGGACTACG GTGTCAACAT CCATCTAGGG GAAAATTTTT ATTCTAATTG GAACTTGACC	240
ATGCTGGATA TCTGTCCCAT TCGTATCGGG GACAATGCTA TGATTGGTCC TAATTGTCAG	300
TTTTTGACAC CCCTCCATCC ACTAGATCCA CAGGAACGCA ATTCAGGTAT CGAGTACGGA	360
AAGCCTATCA CAATCGGAGA TAATTTCTGG ACTGGTGGTG GCGTCATTGT CCTTCCTGGA	420
GTGACACTGG GAAATAATGT CGTTGCAGGA GCAGGGGCAG TAATTACCAA ATCTTTTGGC	480

GACAACGTTG TCCTAGCTGG CAATCCTGCG CGCGTGATTA AGGAAATACC TGTAAATAG	540
AAGTAAAAAG GAACAGCTGG GGTGTTTCT TTTTGTAGG TTTCATCAT TTTTACCCAG	600
TTACATTTA CCTACTCTAT CTCTTAGCAA GTCTGTTTCA TTAAGCAAGT TCAAAGCATC	660
TCGTAAGTGG GATGTTTTTC TCCTCAGTTC ATCAGCTTCC TCCTTGACAC TCGGTCAGAT	720
TTTGATACAA TAGTACAAAA TTAGAGGAGG CAGGCTATGA TTCAGAAACA TGCGATTCCT	780
ATTTTAGAGT TTGATGACAA TCCTCAGGCG GTTATCATGC CCAATCACGA GGGGCTGGAC	840
TTGCAGTTGC CAAAGAAGTG TGTTTATGCA TTTTLAGGTG AGGAGATTGA CCGCTATGCG	900
AGGGAAGTAG GGGCGAACTG TGTTGGCGAA TTTGTTTCTG CCACCAAGAC CTATCCAGTT	960
TATGTCGTGA ACTACAAGGA CGAGGAGGTC TGTCTGGCTC AGGCTCCTGT TGGCTCCGCT	1020
CCAGCAGCCC AGTTTATGGA TTGGTTGATT GGCTATGGTG TGGAGCAGAT TATCTCTACT	1080
GGGACCTGTG GTGTCCTAGC TGATATAGAG GAAATGCCT TTCTAGTCCC GTTTCGCGCT	1140
CTGCGAGATG AAGGAGCCAG TTACCACTAT GTGGCACCTT GTCGTTATAT GGAAATGCAG	1200
CCAGAGGCTA TTGCTGCTAT TGAGGAAGTT TTGAAGACA GAGGGATTCC TTATGAAGAA	1260
GTCATGACCT GGACGACAGA CGGTTTTTAC CGAGAAACGG CTGAAAAGGT GGCTTATCGT	1320
AAGGAAGAAG GCTGTGCTGT TGTGGAGATG GAGTGTTCG CTCTTGCGGC AGTAGCTCAA	1380
TTGCGTGGGG TTCTTGCGG TGAATTGTTG TTCACAGCAG ATTCTCTAGC GGACTTGGAC	1440
CAGTACGACA GTCGTGACTG GGGCTCGGAA GCTTTAATA AGGCGCTAGA ACTGAGTTTA	1500
GCAAGTGTTT ACCACCTTTA GTTGTAAGTG CAAAGGATTT GTTTTATCAT AAAATGTCTA	1560
GCTCATACTT TTCAAAAATA TGTTTAAACG AGGTCACCTT CCTCTTGTC TAGGCATGTT	1620
GAGGTTGGGA AAAATCTTTA AAATCAGAAA AACGTATCAT ATCAGGTGAT GAAAACCTTG	1680
ACACTATGCG TTTTATGTCG ATAAGATTTA GAGTGAGATG AAATGATACT CTTCGAAAAT	1740
CTCTTCAAAC CAGGTCAGCT TCACCTTGCC GTAGGTATAT GTTACTGACT TCGTCAGTCT	1800
TATCCGGCAA CCTCAAACG GTGTTTGTAG CTGACTTCGT CAGTTCTATT TGCAACCTCA	1860
AAACAGTGT TTAGCAACC TGTGACTAGC TTTCTAATCG ATGCCTTGGT TTTTATTGCC	1920
TATAATCAAA AAGAGAAATT TTCTCCTGAA AAGCATATAG AGTAGCTGGC GTTAAAGCT	1980
CCTGTCTTGC TTTTGTGACC TATAGTCACA TCTATCAAGT ATTGTTCTTG CCTAAGCTAT	2040
CAATAAAAAG GTGCATTTT TTAGGCTTGG TGTTAGTAGA TTTTGCCTTA TCCTATCTAA	2100
GTCATTTTGA ACTTTTTATG GTACAATGGA AACATGTTAT TCAAATTATC TAAGGAAAAA	2160
ATAGAGCTAG GCTTATCTCG TTTATCGCCA GCCCGTCGTA TTTTGTGAG TTTTGCCTTG	2220

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GTCATTTTAC TAGGCTCTCT TCTTTTGAGC TTGCCCTTTG TCCAAGTTGA AAGCTCACGA	2280
GCGACTTATT TTGATCATCT TTTCACGCT GTCTCTGCAG TCTGTGTGAC GGGTCTCTCA	2340
ACCCTTCCAG TAGCTCACAC CTATAATATC TGGGGTCAAA TAATCTGTTT GCTCTTGATT	2400
CAGATCGGTG GTCTAGGGCT CATGACCTTT ATTGGGGTTT TCTATATCCA GAGCAAGCAA	2460
AAGCTTAGTC TTCGTAGCCG TGCAACTATT CAGGATAGTT TTAGTTATGG AGAAACTCGA	2520
TCTTTGAGAA AGTTTGTCTA TTCTATTTTT CTCACGACCT TTTTGGTTGA GAGCTTGGGA	2580
GCTATTTTGC TTAGTTTTCG CCTTATTCCT CAACTTGGCT GGGGACGTGG TCTTTTTAGT	2640
TCCATTTTTC TAGCGATCTC AGCCTTCTGT AATGCCGGTT TTGATAATTT AGGGAGCACC	2700
AGTTTATTTG CTTTTCAGAC CGATTTACTG GTCAATCTGG TGATTGCAGG CTTGATTATT	2760
ACAGGCGGCC TTGGTTTTAT GGTCTGGTTT GATTTGGCTG GTCATGTAGG AAGAAAGAAA	2820
AAAGGACGTC TGCACTTTCA TACGAAGCTT GTACTATTAT TGACTATAGG TTTGTTGTTA	2880
TTTGGAACAG CAACTACTCT CTTTCTTGAG TGAACAATG CTGGAACGAT TGGCAATCTC	2940
CCTGTTGCCG ATAAGGTTTT AGTTAGCTTT TTTCAAACAG TGACGATGCG AACAGCTGGC	3000
TTTTCTACGA TAGATTATAC TCAGGCTCAT CCTGTGACTC TTTTGATTTA TATCTTACAG	3060
ATGTTTCTAG GTGGGGCACC TGGAGGAACA GCTGGGGGAC TCAAGATTAC GACATTTTTT	3120
GTCTCTTGG TCTTTGCACG AAGTGAGCTT CTAGGCTTGC CTCATGCCAA TGTTGCGAGA	3180
CGAACGATCG CGCCGCGAAC GGTTCAAAAA TCCTTTAGTG TCTTTATTAT CTTTTTGATG	3240
AGCTTCTTGA TAGGATTGAT TCTGCTAGGG ATAACAGCCA AAGGCAATCC TCCCTTTATC	3300
CACCTCGTAT TTGAAACCAT TTCAGCTCTT AGTACAGTTG GTGTAACGGC AAATCTGACT	3360
CCTGACCTTG GGAAATTGGC TCTCAGTGTT ATCATGCCAC TTATGTTTAT GGGACGAATT	3420
GGTCCCTTGA CCTTGTMTGT TAGCTTGGCA GATTACCATC CAGAAAAGAA AGATATGATT	3480
CACTATATGA AAGCAGATAT TAGTATTGGT TAAGAAAGGA AAGAGCATGT CAGATCGTAC	3540
GATTGGAATT TTGGGCTTGG GAATTTTGG GAGCAGTGTCT CTAGCTGCCC TAGCCAAGCA	3600
GGATATGAAT ATTATCGCTA TTGATGACCA CGCAGAGCGC ATCAATCAGT TTGAGCCAGT	3660
TTTGGCGCGT GGAGTGATTG GTGACATCAC AGATGAAGAA TTATTGAGAT CAGCAGGGAT	3720
TGATACCTGC GATACCGTTG TAGTCGCGAC AGGTGAAAAT CTGGAGTCGA GTGTGCTTGC	3780
GGTTATGCAC TGTAAGAGTT TGGGGGTACC GACTGTTATT GCTAAGGTCA AAAGTCAGAC	3840
CGCTAAGAAA GTGCTAGAAA AGATTGGAGC TGACTCGGTT ATCTCGCCAG AGTATGAAAT	3900
GGGGCAGTCT CTAGCACAGA CCATTCTTTT CCATAATAGT GTTGATGTCT TTCAGTTGGA	3960
TAAAAATGTG TCTATCGTGG AGATGAAAAT TCCTCAGTCT TGGGCAGGTC AAAGTCTGAG	4020

TAAATTAGAC CTCCGTGGCA AATACAATCT GAATATTTTG GGTTCCTGAG AGCAGGAAAA	4080
TTCCCCATTG GATGTTGAAT TTGGACCAGA TGACCTCTTG AAAGCAGATA CCTATATTTT	4140
GGCAGTCATC AACCAACAGT ATTTGGATAC CCTAGTAGCA TTGAATTCGT AAAGAGGGAT	4200
GACCCCTCTT TTTTGATGCC TAAGATGGCA AATAGAGACA GAAGCCCTT GTCTTCTAGT	4260
AAAAGTTCTT CAAAGGCTGG ACTTTATGGT AAAATAGAAA GAAGTGACAA GAGAGAGTAA	4320
TACTCAATGA AAATCAAAGA TCAAACTAGG AAAGTAGCTA CGGGCTGCTC AAAACACTGT	4380
TTTGAGGTTG CAGATAGAAC TGACGAAGTC AGTAACATCT ATACGGCAAG GCGACGTTGA	4440
CGCGGTTTGA AGAGATTTTC GAAGAGTATA AGAAAAATC AGTCCCTAA AGGAGTAGAT	4500
TATGAAGTTA TTGTCTATCG CAATTTCTAG CTATAATGCA GCAGCCTATC TTCATTACTG	4560
TGTGGAGTCG CTAGTGATTG GTGGTGAGCA AGTTGGGATT TTGATTATCA ATGACGGGTC	4620
TCAGGATCAG ACTCAGGAAA TCGCTGAGTG TTTAGCTAGC AAGTATCCTA ATATCGTTAG	4680
AGCCATCTAT CAGGAAAATA AATGCCATGG CGGTGCGGTC AATCGTGGCT TGGTAGAGGC	4740
TTCTGGGCGC TATTTTAAAG TAGTTGACAG TGATGACTGG GTGGATCCTC GTGCCTACTT	4800
GAAAATCTT GAAACCTGC AGGAACTTGA GAGCAAAGGT CAAGAGGTGG ATGTCTTTGT	4860
GACCAATTTT GTCTATGAAA AGGAAGGGCA GTCTCGTAAG AAGAGTATGA GTTACGATTC	4920
AGTCTTGCCT GTTCGGCAGA TTTTGGCTG GGACCAGGTC GGAAATTTCT CCAAAGCCA	4980
GTATACCATG ATGCACTCGC TGATTTATCG GACAGATTG TTGCGTGCTA GCCAGTTCTA	5040
ACTGCCTGAA CATACTTTT ATGTCGATAA TCTCTTTGTC TTTACGCCCC TTCAGCAGGT	5100
CAAGACCATG TACTATCTGC CTGTCGATT CTATCGTTAT TTGATTGGGC GTGAGGACCA	5160
GTCTGTCAAT GAGCAAGTGA TGATTAAGTG CATTGACCAG CAACTCAAGG TCAATCGACT	5220
CTTGATAGAC CAACTTGATT TGTCCTAAGT GAGTCATCCC AAAATGCGAG AATATCTGCT	5280
GAATCATATT GAACTCACGA CGGTGATTTT CAGTACCCTG CTCAACCGAT CTGGAACAGC	5340
GGAGCATCTG GCAAAAAAAC GCCAATTGTG GACCTATATT CAGCAGAAAA ATCCAGAAGT	5400
CTTTCAGGCT ATTCGTAAGA CCATGTTGAG CCGTTTGACC AAACATTCTG TCTTGCCAGA	5460
TCGCAAACTG TCCAATGTCG TCTATCAAAT CACCAAATCT GTTTATGGAT TTAATTAATA	5520
TAAGTGTTTT ATAAGAGGGA TTTAAGAAAA ATTTTAACTT TTTCTTAGTC CTTTTTAATT	5580
TCAGGAGATT ATACTAGAGT CATCAAATAA AGAAAGACTC TAAGGAGAAT CCTATGAAAT	5640
TCAATCCAAA TCAAAGATAT ACTCGTTGGT CTATTCGCCG TCTCAGTGTC GGTGTTGCCT	5700
CAGTTGTTGT GGCTAGTGGC TTCTTTGTCC TAGTTGGTCA GCCAAGTTCT GTACGTGCCG	5760

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ATGGGCTCAA	TCCAACCCCA	GGTCAAGTCT	TACCTGAAGA	GACATCGGGA	ACGAAAGAGG	5820
GTGACTTATC	AGAAAAACCA	GGAGACACCG	TTCTCACTCA	AGCGAAACCT	GAGGGCGTTA	5880
CTGGAAATAC	GAATTCACTT	CCGACACCTA	CAGAAAGAAC	TGAAGTGAGC	GAGGAAACAA	5940
GCCCTTCTAG	TCTGGATACA	CTTTTGTAAA	AAGATGAAGA	AGCTCAAAAA	AATCCAGAGC	6000
TAAAGATGT	CTTAAAAGAA	ACTGTAGATA	CAGCTGATGT	GGATGGGACA	CAAGCAAGTC	6060
CAGCAGAAAC	TACTCCTGAA	CAAGTAAAAG	GTGGAGTGAA	AGAAAATACA	AAAGACAGCA	6120
TCGATGTTCC	TGCTGCTTAT	CTTGAAAAAG	CTGAAGGGAA	AGGTCCTTTC	ACTGCCGGTG	6180
TAAACCAAGT	AATTCCTTAT	GAACATTTCG	CTGGTGATGG	TATGTTAACT	CGTCTATTAC	6240
TAAAGCTTC	GGATAATGCT	CCTTGGTCTG	ACAATGGTAC	TGCTAAAAAT	CCTGCTTTAC	6300
CTCCTCTTGA	AGGATTAACA	AAAGGGAAAT	ACTTCTATGA	AGTAGACTTA	AATGGCAATA	6360
CTGTTGGTAA	ACAAGGTCAA	GCTTTAATTG	ATCAACTTCG	CGCTAATGGT	ACTCAAACCT	6420
ATAAGCTAC	TGTTAAAGTT	TACGGAAATA	AAGACGGTAA	AGCTGACTTG	ACTAATCTAG	6480
TTGCTACTAA	AAATGTAGAC	ATCAACATCA	ATGGATTAGT	TGCTAAAGAA	ACAGTTCAAA	6540
AAGCCGTGTC	AGACAACGTT	AAAGACAGTA	TCGATGTTCC	AGCAGCCTAC	CTAGAAAAAG	6600
CCAAGGGTGA	AGGTCCATTTC	ACAGCAGGTG	TCAACCATGT	GATTCCATAC	GAACCTTTCG	6660
CAGGTGATGG	CATGTTGACT	CGTCTCTTGC	TCAAGGCATC	TGACAAGGCA	CCATGGTCAG	6720
ATAACGGCGA	CGCTAAAAAC	CCAGCCCTAT	CTCCACTAGG	CGAAAACGTG	AAGACCAAAG	6780
GTCAATACTT	CTATCAAGTA	GCCTTGGACG	GAAATGTAGC	TGGCAAAGAA	AAACAAGCGC	6840
TCATTGACCA	GTTCCGAGCA	AAyGGTACTC	AAACTTACAG	CGCTACAGTC	AATGTCTATG	6900
GTAACAAAGA	CGGTAAACCA	GACTTGGACA	ACATCGTAGC	AACTAAAAAA	GTCACTATTA	6960
ACATAAACGG	TTTAATTTCT	AAAGAAACAG	TTCAAAAAGC	CGTTGCAGAC	AACGTTAAAG	7020
ACAGTATCGA	TGTTCCAGCA	GCCTACCTAG	AAAAAGCCAA	GGGTGAAGGT	CCATTACACAG	7080
CAGGTGTCAA	CCATGTGATT	CCATACGAAC	TCTTCGCAGG	TGATGGTATG	TTGACTCGTC	7140
TCTTGCTCAA	GGCATCTGAC	AAGGCACCAT	GGTCAGATAA	CGGTGACGCT	AAAAACCCAG	7200
CCCTATCTCC	ACTAGGTGAA	AACGTGAAGA	CCAAAGGTCA	ATACTTCTAT	CAATTAGCCT	7260
TGGACGGAAA	TGTAGCTGGC	AAAGAAAAAC	AAGCGCTCAT	TGACCAGTTC	CGAGCAAACG	7320
GTAICTAAAC	TTACAGCGCT	ACAGTCAATG	TCTATGGTAA	CAAAGACGGT	AAACCAGACT	7380
TGGACAACAT	CGTAGCAACT	AAAAAAGTCA	CTATTAACAT	AAACGGTTTA	ATTTCTAAAG	7440
AAACAGTTCA	AAAAGCCGTT	GCAGACAACG	TTAAGGACAG	TATCGATGTT	CCAGCAGCCT	7500
ACCTAGAAAA	GGCCAAGGGT	GAAGGTCCAT	TCACAGCAGG	TGTCAACCAT	GTGATPCCAT	7560

ACGAACTCTT CGCAGGTGAT GGCATGTTGA CTCGTCTCTT GCTCAAGGCA TCTGACAAGG	7620
CACCATGGTC AGATAACGGC GACGCTAAAA ACCCAGCTCT ATCTCCACTA GGTGAAAACG	7680
TGAAGACCAA AGGTCAATAC TTCTATCAAG TAGCCTTGGA CGGAAATGTA GCTGGCAAAG	7740
AAAAACAAGC GCTCATTGAC CAGTTCCGAG CAAACGGTAC TCAAACCTAC AGCGCTACAG	7800
TCAATGTCTA TGGTAACAAA GACGGTAAAC CAGACTTGGA CAACATCGTA GCAACTAAAA	7860
AAGTCACTAT TAAGATAAAT GTTAAAGAAA CATCAGACAC AGCAAATGGT TCATTATCAC	7920
CTTCTAATCT TGGTTCTGGC GTGACTCCGA TGAATCACAA TCATGCTACA GGTACTACAG	7980
ATAGCATGCC TGCTGACACC ATGACAAGTT CTACCAACAC GATGGCAGGT GAAAACATGG	8040
CTGCTTCTGC TAACAAGATG TCTGATACGA TGATGTCAGA GGATAAAGCT ATGCTACCAA	8100
ATACTGGTGA GACTCAAACA TCAATGGCAA GTATTGGTTT CCTTGGGCTT GCGCTTGACG	8160
GTTTACTCGG TGGTCTAGGT TTGAAAAACA AAAAGAAGA AAATAATCA GCTAAGGAAA	8220
TAAATGATGG ATAGTGGGCT GACTAAGATT AGTTTAACAA CTCAATCAGC AATCAGGACT	8280
TTCTTTCAAT AGCAGATTAA AATCATCGTA AAACAATAAA AATAGTGTTA TACTTAAAGC	8340
AGTATAGCAC TGTTTTATC AAAGGAGAGA CAGATGGGAA AGACAATTTT ACTCGTTGAC	8400
GACGAGGTAG AAATCACAGA TATTCATCAG AGATACTTAA TTCAGGCAGG TTATCAGGTC	8460
TTGGTAGCCC ATGATGGACT GGAAGCGCTA GAGCTGTTCA AGAAAAAACC GATTGATTTG	8520
ATTATCACAG ATGTCATGAT GCCTCGGATG GATGGTTATG ATTTAATCAG TGAGGTTCAA	8580
TACTTATCAC CAGAGCAGCC TTCTCTATTT ATTACTGCTA AGACCAGTGA ACAGGACAAG	8640
ATTTACGGCC TGAGCTTGGG AGCAGATGAT TTTATTGCTA AGCCTTTTAG CCCACGTGAG	8700
CTGGTTTTCG GTGTCCACAA TATTTTGCGC CGCCTTCATC GTGGGGGCGA AACAGAGCTG	8760
ATTTCCCTTG GCAATCTAAA AATGAATCAT AGTAGTCATG AAGTTCAAAT AGGAGAAGAA	8820
ATGCTGGATT TAACTGTTAA ATCATTTGAA TTGCTGTGGA TTTTAGCTAG TAATCCAGAG	8880
CGAGTTTCTT CCAAGACAGA CCTCTATGAA AAGATCTGGA AAGAAGACTA CGTGGATGAC	8940
ACCAATACCT TGAATGTGCA TATCCATGCT CTTGACAGG AGCTGGCAA AATAGTAGT	9000
GACCAAATC CCACTATTAA GACAGTTTGG GGGTTGGGAT ATAAGATAGA GAAACCGAGA	9060
GGACAAACAT GAACTAAAA AGTTATATTT TGGTTGGATA TATTATTTCA ACCCTCTTAA	9120
CCATTTTGGT TGTTTTGG GCTGTTCAAA AAATGCTGAT TGCGAAAGGC GAGATTTACT	9180
TTTGCTTGG GATGACCATC GTTGCCAGCC TTGTCGGTGC TGGGATTAGT CTCTTTCTCC	9240
TATTGCCAGT CTTTACGTCG TTGGGCAAAC TCAAGGAGCA TGCCAAGCGG GTAGCGGCA	9300

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AGGATTTTCC TTCAAATTG GAGGTTCAAG GTCCTGTAGA ATTTTCAGCAA TTAGGGCAAA	9360
CTTTTAATGA GATGTCCCAT GATTTGCAGG TAAGCTTTGA TTCCTTGGAA GAAAGCGAAC	9420
GAGAAAAGGG CTTGATGATT GCCCAGTTGT CGCATGATAT TAAGACTCCT ATCACTTCGA	9480
TCCAAGCGAC GGTAGAAGGG ATTTTGGATG GGATTATCAA GGAGTCGGAG CAAGCTCATT	9540
ATCTAGCAAC CATTGGACGC CAGACGGAGA GGCTCAATAA ACTGGTTGAG GAGTTGAATT	9600
TTTGTACCCT AAACACAGCT AGAAATCAGG TGGAACTAC CAGTAAAGAC AGTATTTTTC	9660
TGGACAAGCT CTTAATTGAG TGCATGAGTG AATTTTCAGTT TTTGATTGAG CAGGAGAGAA	9720
GAGATGTCCA CTTGCAGGTA ATCCCAGAGT CTGCCCGGAT TGAGGGAGAT TATGCTAAGC	9780
TTTCTCGTAT CTTGGTGAAT CTGGTCGATA ACGCTTTTAA ATATTCTGCT CCAGGAACCA	9840
AGCTGGAAGT GGTGGCTAAG CTGGAGAAGG ACCAGCTTTC AATCAGTGTG ACCGATGAAG	9900
GGCAGGGTAT TGCCCCAGAG GATTTGGAAA ATATTTTCAA ACGCCTTTAT CGTGTGCGAA	9960
CTTCGCGTAA CATGAAGACA GGTGGTCATG GATTAGGACT TGCGATTGCG CGTGAATTGG	10020
CCCATCAATT GGGTGGGGAA ATCACAGTCA GCAGCCAGTA CGGTCTAGGA AGTACCTTTA	10080
CCCTCGTTCT CAACCTCTCT GGTAGTGAAA ATAAAGCCTA AAACCCCTTT ACAATCCAG	10140
CTATTCATGG TAGAATAGAT TTTGTGTGAA ATATCAGCAG GAAAGCATGA AGCTCGTCAA	10200
CAGGTGTCTT ATGACAAGTA ACCTTGGCTG TTTAGGCGAA GGGCATCTGC ACGG	10254

(2) INFORMATION FOR SEQ ID NO: 30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9769 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30:

CCGGCGACTA TCGATAACAC TTGACTTGGT AGCCCCACAT TTTGGACAAC GCATCCTTTC	60
CCTCCTTATC GTTTCTTTT CATTATACCA TTTTAAAGC GATTCCCAA ACAATTCCTC	120
TTTTTGCTTG ACAAGTTTT TGTTTTGTG TATTATTTAA TTAAGACAAC AAGGTAAAAG	180
AAAGGAGACT AAGATGTCCT GGACATTTGA CAACAAAAA CCCATCTATT TACAGATTAT	240
GGAGAAAATC AAGCTTCAGA TTGTTTCCCA TACTGGA CCATCAAC AACTCCAAC	300
CGTGAGGAGC TAGCTAGCGA GGCTGGTGT AATCCCAATA CCATCCAAAG AGCCTTATCA	360
GACCTGAAC GAGAAGGATT TGTCTACAGC AAGCGAACAA CTGGACGATT TGTGACTAAG	420
GATAAGGAGC TAATCGCCCA GTCACGCAA CAATTATCAG AAGAAGAATT GGAACACTTC	480

GTTCCTCCA TGACCCATTT TGGCTATGAA AAAGAAGAAC TACCAGGCGT AGTCAGTGAT	540
TATATTAAAG GAGTTTAAGC CTATGTCATT ACTAGTATTT GAAAATGTAT CCAAATCATA	600
TGGAGCAACA CCAGCCCTTG AAAATGTTTC TCTTGACATT CCAGCTGGAA AAATTGTCGG	660
CCTTCTTGGG CCAAACGGCT CAGGAAAAAC AACCTGATT AAAC TAATTA ATGGCCTCTT	720
ACAACCAGAT CAAGGACGTG TCCTCATCAA CGACATGGAC CCAAGCCCAG CAACCAAGGC	780
CGTTGTAGCT TATTTGCCTG ATACGACCTA TCTCAATGAG CAAATGAAGG TCAAAGAAGC	840
CCTAACCTAC TTCAAGACCT TCTATAAAGA TTGTCAGATC TTGAACGCGC CCATCATCTA	900
CTTGCAGACC TGGGCATTGA TGAAAATAGT CGTCTCAAGA AACTATCAAA AGGAAACAAA	960
GAAAAGGTTT AACTGATTTT GGTATGAGC CGTGATGCTC GTCTCTATGT TTTGGACGAA	1020
CCCATTGGTG GGGTGGATCC AGCAGCCCGT GCTTATATCC TCAATACCAT TATCAACAAC	1080
TACTCACCAA CTTCTACCGT TTTGATTTCT ACCCACTTGA TTTCTGATAT CGAGCCAATC	1140
TTGGATGAAA TTGCTTCCCT AAAAGACGGA AAAGTCGTCC GTCAAGGAAA TG TAGATGAT	1200
ATTCGCTACG AGTCAGGTGA ATCCATTGAC CAACTCTTCC GTCAGaATTT AAGGCCTAAG	1260
CAAAGGAGAT TATTTATGTT TTGGAATTTA GTTCGCTACG AATTTAAAAA TGTTAACAAG	1320
TGGTATTTAG CCCTCTACGC AGCCGTGCTA GTCCTTTCTG CCCTCATCGG AATACAGACA	1380
CAAGGCTTTA AAAATCTACC TTACCAAGAA AGTCAGGCTA CTATGCTACT TTTCTAGCT	1440
ACAGTCTTTG GTGGCTTGAT GCTTACACTT GGGATTTCAA CCATTTTCTT GATTATTAAA	1500
CGCTTCAAAG GTAGTGCTA CGACCGACAA GGCTATCTGA CTTTGACCTT GCCAGTTTCT	1560
GAACACCATA TCATCACAGC CAAACTAATC GGTGCCTTTA TCTGGTCATT GATTAGCACC	1620
GCTGTATTGG CTCTAAGTGC TGTTATTATT CTGGCTTTAA CAGCTCCAGA ATGGATTTCCT	1680
CTTTCTTATG TGATTACATT TG TAGAAACA CATCTCCCTC AGATCTTTCT TACAGGTATA	1740
TCCTTCCTAC TAAATACTAT TTCAGGAATC CTCTGCATCT ACCTGGCTAT TTCCATTGGA	1800
CAGCTTTTCA ATGAATACCG TACAGCACTC GCTGTTGCAG TCTACATTGG TATCCAAATC	1860
GTCATTGGAT TTATTGAACT TTTCTTCAAT CTTAGTTCTA ATTTCTATGT CAATTCACTG	1920
GTAGGACTCA ATGACCATTT CTATATGGGA GCAGGTATAG CCATTGTTGA AGAACTCATA	1980
TTCATAGCTA TCTTTTATCT CGGAACCTAC TACATCTTGA GAAATAAGGT TAATTTGCTT	2040
TAAATAATTT TTACCTAGAT ATGTAACATA CTCATAGAAC AAAAGAGACC AGGCAAAAAG	2100
TCTTTAAAAT TAGAAAACGC ATAGTATCAG GTGTTGAATA TG TACTGCcC CCCAAAAGTT	2160
AGATTTTTC TGTCTAACTT TTGGGGGCAG TTCATAAGAA CCTTGGTAAT ATGCGTTTTT	2220

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TGTGAGCTGA CTTATTTCTT	TTCACCTATAT CGCAAAATGA AATAAGAACG GAACGATGGG	2280
ATTTTGAAT TCAAATCAAT	TTATAAGAAT GTTTTAGAAG TAATATTATC CTATTCCAGA	2340
TTCAGTTCAC TATACAATTG	AGTTTTCAAG CAACCTGTTT ACATAATGTG TACATAATTA	2400
GGTTCGTGAT TCCACCCCTT	TCACCTTTAA AAACCTCGCT TTCGCAAGGC TCTTCTATTT	2460
ATAAGATAAG GCACGTTTAA	AGGTTTTCCTA AATCCCTAAA TCATCCGTTT GAAGAACGAG	2520
ACTAGCATAC ATGCGTCCGA	TAAATCCTGT TGCTACCACC GCAAAAATCA CTGTAATAGC	2580
AAGTGAATC CATGCTTCTG	CTCCCCCGC ATAGTCATTA ATCGTTCGAA ACGGCATAAA	2640
GAAGGTCGAA ATAAAGGGAA	TATAAGAACC AATCTTCAAG AGGAGATTGT CACCAGCTGC	2700
ACCTAGAGCT GTCACCTCAA	AAAAACCACC CATAATCAAA ATCATCAAAG GCGACAAGGC	2760
TTTCCCTGAG TCCTCAGGAC	GAGAAACCAT AGATCCTAGG AAGGCTGCCA AGACTACGTA	2820
CATGAAAAGA CTGATCAAAA	TAAAGAGCAA GGTATTCACT GAGATAGCAT CTCCCAAGTG	2880
ATCCAAAATA CCAGACTGAG	CCAAGAATGG CAAATCTTTA AAGAGCAAAA CGGCAGCCAG	2940
ACCACCTACA ACATAGATCC	CAATATGCGT TAAATCACT AGAAACAGAG CCATCATCCG	3000
CGCATAGAAA TAGTGACTTG	CCCTTATGCT AGAAAAACG ACTTCCATAA TTTTGGTGCC	3060
TTTTTCACTG GCAACTTCTT	GAGCTGTTAC ACCCGCATAG GTAATCAGAA TCATATAAAG	3120
AAAGAATCCT AAGGCACCTG	CTGCAATTGT TTGAATAAAC TTTTATTTT CTTGGGCTTC	3180
ATCAATCTTT TCTGTGAATT	GAATTGTCTG CGCTAAGCGT TTTTCTGCT CTTGAGACAA	3240
GGAAGCAGTT GAACGATTAA	GCTGATTTTG CAGTTCATTG AGTGACCTG TAACCTCAAA	3300
TTTAATTCCA TTTTCAAGCG	ATGTTTCGCC ATGATAAACT GCCTTTAGAA CACTATCTTC	3360
TTGATCAATG GTCAAATAAC	CTTTTAATTT TTCTTCTTTA ATTGCTTCTT TGGCACTTGC	3420
TTCTGCTTTA TAGTCGAAGT	TAACACCATT TACATTCTTC AGTCCTTCTG CTACAGATGG	3480
CACTGTTGTC ACTACTGCCA	CTTTATTATT TTAGCCATA GAAGAACCTT GGAGATGCCC	3540
AATTCCTACA GAGATTCCTA	AAAAGAGGAA CGGCGAAATC ACCATAAAGA AGAACTCCA	3600
TGACTCGACA TGTCGAAGAT	AGGTTTCCTT GATTACAACC CACATATTTT TCATACTTCC	3660
ACTCCTGATT CTAGTTTAAA	GATTTTCATG ATAGTTGGCG CTGTTGGTC AAATGTTGCG	3720
ATATATTGAC CTTGAGTCAA	GATTGAGAAG AGTTCCCTTC CAGCGCTCTC ATCCTCCAAA	3780
ATCAATTTCC AACTGCCTTG	TTTGGTCAAG CTCACCTGTT TGACATGAGG AAGATTTTCC	3840
AATTCCTCCT TGCTTCGTTT	ACTTGAAACA AAGAGACGCG TTTTCCCGTA TTGATTGCGG	3900
ACATCCTGAA CTGGTCCGTG	CAAGACCACA CGGCCATCTC GGATCATCAG AATATCGTCA	3960
CAAAGTTCCT CAACATTGGT	CATGACATGG TCAGAAAAGA TAATGGTTGT CCGCGCTCTT	4020

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TTTCCTGAAA AATGACTTGT TTGAGCAATT CTGTATTAAC TGGGTCCAAT CCACTAAAAG	4080
GCTCATCCAA GATAATCAGG TCTGGTTCAT GAATCAGAGT AATAATGAGC TGAATCTTCT	4140
GCTGATTTCC TTTTGACAGA CTCTTGATT TATCTGTCAG CTTTCCTTTC ACTTCCAACC	4200
TCTTCATCCA TTGAGGGAGT TTTTCTTTGA CTCTTTTGGC ATCCATGCCT TTTAGAGTCG	4260
CCAAGTAGCG AACTTGTTCA AGAACTGTCA ATTTAGGCAT GAGATGCGTT CTTCAGGCAG	4320
ATAACCAATC CGAGCATAGG TCTCCTGACG AATATCCTGA CCATCCAGAC CGATTCTCTC	4380
CTGATATTCT AGGAATTTCA AAATACTATG GAAAATCGTT GTTTTTCAG CACCATTTTT	4440
TCCGACTAGT CCCAAAATAC GACCTGGTCG CGCTTGAAAG TCAATACCAA ACAAACCTTG	4500
CTTGGATCCA AAACCTTTCT CTAGACTTCT TACTTCTAGC ATCTTTCACC TCCGAAATTT	4560
CTTGCACTCA TTATACTCCT TTTTGATAGC CTTTACAATG TTTTGTGTC ATTTTGTAGAA	4620
GACTATTGCT GTGTAAAATA TGGCCTGGAG CACTTTTATA CTCAATGAAA ATCAAAGAGC	4680
AAACTAGGAA GCTAGCCGTA GACTGCTCAA AGTACAGCTT TGAGGTGCA GATAAACTG	4740
ACGAAGTCgA CTCAAAACAC TGTTTTGAGG TTGTGGATAG AACTGACGAA kCrTaaCTAT	4800
ATCTACGGCA AGGCGAACTG ACGTGGTTTG AAGAGATTTT CGAAGAGTAT TAGTGATAAA	4860
TCCATTATAC AGCAGCAAAC TTAATTTATA CCTTCCGCTC CTCAACTGTC TATTTTAAAT	4920
CCTGAATTGT TATTTGAGTA ACTCCTTTTT CCTCGTAAAG TTTTCTTCCT CTAAAACCTC	4980
TGGAAAAAGG CTAATAGTTT CAGACAACAT TTTTATAAGA AACAAGTTCA TCTGTCATTT	5040
CAAGAAGGAG TAATCCTTTA TCTACTAATG GACGGAACAG AATTCAACCG CTTGTCCGAT	5100
ATGTTTCTA AGGATTATAT AGTAAATGA AATAAGAACA GGACAAATTG ATCAGGACAG	5160
TCAAATTGAT TTCTAACAAT GTTTTAGAAG TAGATGTATA CTATTCTAGT TTCAATCTGC	5220
TATATCTATT ATGCACACCC CTATAGGATC TAATGAAAAT CACAACAGGC TCATTCATAG	5280
ATGGTTACCT AAGCCTAAGG GAACTAAGAA AACGACTACC AAGGAAGTCG CATTTCATCGA	5340
AAAGTAGATT AACAACTATC CTAAAAATG CTTGAACTAC AAGTCCCCCA GAGAAGACTT	5400
CTGGATGACT AACTTGAAC TGAATTTAG CAATAATTAA TTCACTATCT AACTATATTT	5460
AGTAATTATT TCAGAACTGA TTAATATTAA AATTAATAA CAATTCAAAG GATTCATACT	5520
AGCCATAAAT TACGTCCATC AGAGAGAGAC TCTTACTACT TTTAGATTTT AGTCTTTCTA	5580
GCTTCAGAAT ACATCTAAAC TTTAGGGAAA ATGACTATTC GAAAGCGCGA ATGCCTCAAA	5640
ATTATCTCAG ATAAGCTATT CGAACTTAG AATGCTTTTA AATTTATGGA ATTGCGATTA	5700
TTCGAAACCT AGAATGCATA TAACCTTTAG TTGACAGACC TATTCTAAGT CTCGAAGGGC	5760

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TATTTACTTT	CTATTCCTTA	TCAAAAAAGA	CTCATTCCCC	CTTTCTCCTC	CAAAATATGG 5820
TATAGTAGAA	ATATACTATC	TATGAGGAGT	TTACATGTCA	CAGGATAAAC	AAATGAAAGC 5880
TGTTTCTCCC	CTTCTGCAGC	GAGTTATCAA	TATCTCATCG	ATTGTCGGTG	GGGTTGGGAG 5940
TTTGATTTTC	TGTATTTGGG	CTTATCAGGC	TGGGATTTTA	CAATCCAAGG	AAACCCCTCTC 6000
TGCCTTTATC	CAGCAGGCAG	GCATCTGGGG	TCCACCTCTC	TTTATCTTTT	TACAGATTTT 6060
ACAGACTGTC	GTCCCTATCA	TTCCAGGGGC	CTTGACCTCG	GTGGCTGGGG	TCTTTATCTA 6120
CGGGCACATC	ATCGGGACTA	TCTACAATA	TATCGGCATC	GTGATTGGCT	GTGCCATTAT 6180
CTTTTATCTA	GTGCGCCTAT	ACGGAGCTGC	CTTTGTCCAG	TCTGTCTGCA	GCAAGCGCAC 6240
CTACGACAAG	TACATCGACT	GGCTAGATAA	GGGCAATCGT	TTTGACCGCT	TCTTTATTTT 6300
TATGATGATT	TGGCCCATTA	GCCCAGCTGA	CTTTCTCTGT	ATGCTGGCTG	CCCTGACCAA 6360
GATGAGCTTC	AAGCGCTACA	TGACCATCAT	CATTCTGACC	AAACCCTTTA	CCCTCGTGGT 6420
TTATACCTAC	GGTCTGACCT	ATATTATTGA	CTTTTCTTGG	CAAATGCTTT	GACACGTAAA 6480
AAATCCGTTT	GGTTTCCCAA	GTGGATTTTT	AAAGCGTAGA	TTAACTATAG	CTTGATACTA 6540
AATATACTTT	GGTATGGAAA	TCATGCATAT	TTTTCGATAG	TGAGGCGAGG	ACTTACCTAG 6600
CCTTTCGCC	GTGATAGAAA	CACCTGAAAT	CTAATGGTTT	CAGGTATTCG	GAAACTTTGA 6660
GCCTAGTGTC	TCAAAGTTTA	GGTATGGAAT	TTTGAAGAAA	GTGCTACCG	TCCGTAATCA 6720
CTTAAGGAAA	GGCTCAAAAA	TATTGTTTTT	AACCACAAAA	TCCGTTTGGT	TTCCCAAGCG 6780
GATTTTGTGC	TTTATTTTGA	AACTTCTTTT	GCAAGAACAA	AGTTCCCAAG	TGTGGCAGAA 6840
CCATTTCTTG	CGACTGCTGG	CGTCACGATA	TAGTCACGCA	CATCTGGTAC	TGGTAGGTAA 6900
CCATTAAGAA	GAGATGTAAA	TTTCTCACGG	ACACGGTCCA	GCATATGTTG	TTGAGCCATG 6960
ACCCCTCCAC	CAAAGACAAT	CACGTCTGGG	CGGAAAGTCA	CTGTGCGATT	AACCGCAGCT 7020
TGAGCGATAT	AGTAGGCTTG	AACATCCCAA	ACAGGGTTGT	TGAGTTCAAT	AGTTTCCCCA 7080
CGTACACCTG	TACGAGCTTC	CAAACCTTGA	CCAGCTGCAT	AACCTTCTAG	ACATCCCTTA 7140
TGGAAAGGAC	AAACACCCTT	AAACTCTTTT	TCAATATCCA	TTGGGTGTCT	AGCAACATAA 7200
TAATGACCCA	TTTCAGGGTG	ACCCACACCA	CCGATAAACT	CACCACGTTG	GATGACGCCT 7260
GCACCGATAC	CTGTACCGAT	TGTGTAGTAA	ACCAAGTTTT	CGATACGACC	ACCAGCATTG 7320
TTACGGGCAA	CCATTTCAAC	GTAAGCAGAG	CTGTTTACGT	CTGTTGTGAA	GTACATTGGC 7380
ACGTTTAGGG	CGCGACGAAG	GGCACCAAGC	AAGTCTACAT	TTGCCCAGTT	TGGTTTGGGA 7440
GTCGTCGTGA	TAAAGCCATA	AGTTTGTGAG	TTTTTGTCAA	TATCAATCGG	CCCAAATGAA 7500
CCAACTGCAA	GACCAGCAAG	GTTATCGAAT	TTTGAGAAGA	ACTCAATGGT	TTTATCGATT 7560

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GTTTCGATTG GAGTTGTTGT TGGAAATTGT GTTTTTCTA CAACGTAAA GTTTCATCA	7620
CCGACAGCAC AGACAACTT TGTACCGCCC GCTTCCAAGC TTCCATATAA TTTTGTCTG	7680
ATAAACCTCT TGTTTTATT TTCTTTATTA TAGCATACTT CGAAAGTCTA AATGTCTCTA	7740
TTTTTTAGAT TTTCCTCTGT AAATCTTACT ATCTAATAAA AACGAACAAA CATGTCTTTT	7800
GTTTCGTTTC ACATTAGAGA GGATTGATTA GATTTTCACT TCGATCACAG CATCCCCCTT	7860
AGCAACTGAA CCTGTTGCGA CTGGAGCTAC TGAAGCGTAG TCACCTGTAT TTGTAACGAT	7920
AACCATGTGT GTATCATCAA GTCCAGCTGC AGCGATTTTG TTTGAGTCAA ATGTTCCAAG	7980
AACATCGCCA GCTTTCACCT TATTACCTTG AGCAACTTTT GTTTCAAAAC CGTCACCGTT	8040
CATAGATACA GTATCAATAC CAACATGAAT CAAAACCTCA GCACCATTTT TTGTTTTCAA	8100
ACCAAAAGCG TGCCCTGTTG GAAAGGCAAT TGAAACTTCA GCATCAGCTG GTGCATAGAC	8160
CACGCCTTGG CTTGGTTTCA CAACGATACC TTGTCCCATTA GCTCCACTTG AGAAGACTGG	8220
GTCATTGACA TCAGCAAGAG CGACAACATC ACCGACGATA GGAGTTACAA GTGTTTCATT	8280
TTGAAGAGCT GCTGGCGCAA CTTCTTCTTT TTCTTCAGCC ACTTCAGCTC GTTTTGCAGC	8340
TGCAGTTGCG TCTACTTCAT CTTCTGTAACC AAACATGTAA GTAAGAGCAA Aaccaagggc	8400
AAATGATACA GCTACCATAA GAAGGTATTG TGGAAGTTGT CCGTTACCAA CATAAAGCAT	8460
TGTACCAGGG ATGATGGTGA TACCATTACC AGTACCAGCA AGTCCAAGGA TAGAAGCCAA	8520
TCCACCACCG ATTGCACCAG CAATCAATGA AAGGAAGAAT GGTTTACGGA AGCGCAAGTT	8580
CACCCGAAG ATAGCAGGCT CTGTAATACC TAGGAAGGCA GAAAGAGCAG CCGGGAAGC	8640
AAGTGTTTTC AGTTTGGAT TTTTGTGTTT AACACCAACC GCAACAGTAG CAGCACCTTG	8700
AGCTGTCATA GCAGCTGTGA TGATAGCGTT GAATGGGTTA GCATGGTCAG CAGCAAGTAA	8760
TTGCACTTCA AGCAAGTTGA AGATGTGGTG CACACCTGAC ACGACGATCA ATTGGTGAAC	8820
CCCACCAATC AAGAAACCAC CAAGACCAA TGGCATGCTA AGAATCGCTT TTGTAGCAAT	8880
AAGGATGTAG TTTTCAACAA CGTGGAAAAC TGGTCCAATG ACAAAGAGTC CAAGGATAGA	8940
CATGACCAA AGTGTCACGA ATGGTGTTAC CAAGAGGTCA ATGACATCTG GAACAACTTG	9000
CGGACAGCTT TTTCAAATTT AGCTCCGACA ACCCCGATGA TGAAGGCTGG AAGAACGGAA	9060
CCTTGCAAAC CAACAACAGG GATGAAACCA AAGAAGTTCA TCGCTGTTAC TTCACCACCT	9120
TGAGCAACTG CCCAAGCGTT TGAAGTGAG CCAGAGACAA GCATCATACC AAGAACGATA	9180
CCAACGGCAG GATTTCCACC AAATACACGG AAGGTTGACC ACACAACCAA ACCTGGCAAG	9240
ATGATGAAG CTGTATCTGT CAAGATTTGT GTGTAAGTTG CAAAGTCACC TGGAAGTGGC	9300

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ATTTCAAGAG CGTTGAAAAG ACCACGCACA CCCATGAAGA GACCTGTCGC TACGATAACT	9360
GGGATGATTG GAACGAAAAC ATCACCAAAA GTACGGATAG CACGTTGGAA CCAGTTCCT	9420
TGTTTAGCAA CTCTGCTTT CATGTCATCC TTAGATGATG TTGGTAATCC AAGTACAACA	9480
ACTTCATCGT ACATTTTGTT AACTGTACCT GTACCAAAGA TAATTGGTA TTGCCCTGAG	9540
TTAAAGAAAG CACCTTGAAC TTTTCCAAG TTCTCAATCA CTTCTTTATT GATTTTCTCT	9600
TCATCTTTGA CCATGACACG TAGACGAGTC GCACAGTGGG CAACACTATT GACATTTTCA	9660
CGTCCGCCCA AGGCATCGAT GACTTTTTTTT GCAATTCCTT GATTGTTTAT TTGCAAAAAT	9720
CTCCTTATAT AACATTTTGT TCTTGTTTGA AAGCGATTTT ATTCGCCGG	9769

(2) INFORMATION FOR SEQ ID NO: 31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 3149 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31:

CGCTTGAGTG CTAATTCATA GTTCTATTGT ATCACTTGGT CAGAAATAAT CAAGAAAAAA	60
GTCTGACTTT CTCAAGATAA AAAGCCTGAG ACCAACTCAG ACTTTTAAAT TCTTAAATG	120
GCAATTCCTC CTCTTCCAAG ACCAAATCTG CCAATCTTG GCCTGCATTA TTTTCACGCA	180
TAGCACGTTG GGCACGACTT TCCAAGAGTT GGAATCCTGT GACAAGTACT TCGGTCACGT	240
AGTTCATTTG GCCATTTTTC TCAAAGCGAC GGGTACGCAA TTCTCCATCA ACGGAAATGA	300
GACTACCTTT GGTGCGTAC TTGCCAAAGT TTCTGCTAGT CTGCCCCATA GGACCATATT	360
GACAAAATCA GCTTCACGTT CACCGTTTGT GTCTTTGTAA CGACGGTTCA CAGCGATAGT	420
TGCTCGCGCT ACCGACTTGT CATTGTTGGT TTTGTGCAAT TCTGGTGTAG ACGTTAAACG	480
TCCAATCAAG ATAACTTTAT TATACATATT TTCTTCCTCC TACTTATCTA TTCGTAGGAA	540
ATCAAAAAAA GTTACAGAAA TTGTAACTT TTCCGAGAAA TTTTATTATT TTTATGAACC	600
ATGAAACCTG TCGCCTGTTG ATTGGCCATA ATGGTCATAT CTGTAATCTG AACACGACGA	660
GGTTGACTAG TCACATAGAC TACTGTATCT GCAATATCCT GAGCTTGCAA AGCTTCTATT	720
CCTTGGTAAA CGGACGCAGC TCGTCTTTTA TCACCATGAA AACGCACTGT AGAAAAATCT	780
GTTCGACAAA TTCCAGGCTG AATGGTCGTC ACCTTGATAT CCGTTGCGAT GGTATCAATT	840
CGCAGTCCAT CTGAAAAGGT CTTAACTGCC GCCTTGGTGG CTGAGTAAAC AGCTGCACCA	900
GCATAGGCAT AAATTCCTGC GGTGACCCC ATATTGATAA TATGACCTTG ATTGGCTTTT	960

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ACCATTGCTG GCAAGAAACA GCGAGTGACT GCCATCAAAC CTTTGACATT GGTATCCAAC	1020
ATGGTCAGCA TATCCAATC TTCATAGTCT TGATAGGGAG CTAAGCCAAG AGCCAGTCCT	1080
GCGTTATTGA CCAGGATGTC AATCTGACCT ATCGTTTCTA AAATATCAGA GCAGACAGTC	1140
TTTACCATTG TCATATCCGT GACATCTAGG AGAAAAGTCC AAAGTGTGTTG ATTTGGAAAA	1200
GTTTCTGCAA ACTCCGCCTT AAGAGCTTCT AGTCTGTCTA TCCGTCGTCC TGTTAGAACG	1260
ACATCCTCAC CCTGCTCCAG ATAAGCACGC GCAATCGCTT CACCGATTCC TGATGTCGCT	1320
CCTGTAATCA CAACATTTT TGCCATCTTA TTTCTTCTA GCTGGTCTAT CAGATATTAA	1380
CAACTTCTTA GGCAGTCCAG TGTTTCGCTG GGTGCAACGG TGTTCCGACA ACTTGGTCTT	1440
CTGATAATTC AAGCACCCCA CGTTTTGTG GAGCATTTGG CAGATGCAAT TCACGAGGAC	1500
TGCACATCAT ACCAAAATC TTTTCAACAC GAAGTTCACC TGGGAAAATG AGATTCCCTT	1560
TTGGCATCAT AGCTCCAGGA AGCGCGACAA TGGTTTTCAA CCCACACGC GCATTGGGAG	1620
CTCCTGCAAC GATTGTGACA GTCTTATCAC TTGCGACTGC AACTTGGCAG ATGTTGAGGT	1680
GGTCACTATC TGGATGGGCT ACCATCTCAA CAATTCACC TACAACAAAC TTAGGTTCTT	1740
TATCATTAAC AATTCTTCT GTAAAACCTT CCGCTGCAA CTCTTGGTTC AAACGAGCGA	1800
CTTGCTCATC TGTCAAAAAG ACTTGACCGC GCTCTGCAAT TTCAAATAAA CTTGAAACTT	1860
CGAAAATATT CCAAGCCACT GTTCCCCAT TATCTTTGAG AAAACACGG GCTACCTTGC	1920
CTTTGCGCTC CACATCCAGT TTGGCATCTC CGCTATTTT CACGATGACC ATAAGGACAT	1980
CACCGACATG TTCTTTATTA TATGTAAAA TCA'TGTTC CTTTTCTCC TATTTAGTC	2040
CTGCTAAAA GTCATTGATT TGTTGCTTGC TTTTACGGTC GCGATTGACA AAACGACCGA	2100
TTTCCTTGTC CTTTCTAGA ACAACAAGGC TAGGAATTCC GTAAACATCC CAGAGTTGG	2160
CCAAATCCAT ATACTGATCT CGGTCCATTC GAATAAAGGT GAACTCTGGA TTGGTCTCCT	2220
CAATCTCTGG TAAGGCAGGA TAAATATAAC GACAATCGCT ACACCAGTCT GCCACAAAA	2280
TGAAGACCTT CTGCCCCGCT TTTTCCACTA AAGATGCTAA TTCTTCTAAA CTTGCTGGCT	2340
GATCATAAG ACTTCTCCT CATAGACTAG GTCTTCATTT TCATAGACAA AGGTATAATG	2400
ACGGCCATCC TCAAAAATGA CGCCACCAAC CAAGCTCTCC AGACTGCTTT CGTAAACTTG	2460
AACATAAAGG GTCGCAATTT CCCCATGTC GGAAAAATGG TCTCGCACAA TCTCTGTCAA	2520
CTCTTCTGA GTCTTCATGA GCTTACGGTC ATCTGCAACT TTTTTCGTAG CAAGAGCAAG	2580
GCTTCCGATA CCTAGCAGAG CCAAGCCTGC CATCCACATT TTTTGTAGCTT TCATACCATT	2640
CATTTTAACA CAAAAAAGGC TTCAGGACAA ATGAGGAAGC AGCAGAAAAG CAAGTAAAAA	2700

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GCCTCTTCCT TTAAGGAAAA GGACTTCTTA TACTCAATGA AAATCAAAGA CCAAAGTAGG	2760
AAGCTAGCCG CAGGCTGCTC AAAGCACTGC TTGAGGTTG TAGATAGAAC TGACGAgTCa	2820
CTCAAAACAC TGTTTTGAGG TTGTGGATGA AGCTGACGTG GTTTGAAGAG ATTTTCGAAG	2880
AGTATTATTC TTATTGCCAG GCACCTAAGT TGCCAACGTA GTAAGTATCA GGTGTGTAGG	2940
TATTGCGAGC ATCTTACCTG ATGAAGCCAG ATAATACTAC TTGCCATTGT CTTTGACCCA	3000
ATCATTCGCA ATCATGGAAC CAGAAGAACT TACATAATAC CATTCTCCCT TGTCAATAAC	3060
CCAAGTACTG ACTTTCATGG TTCCTGAGCA ATTAAGGCA AAAAACTGT CCAATAACAT	3120
TCGTTTTTTA AAAGCATTTG ACACTACAT	3149

(2) INFORMATION FOR SEQ ID NO: 32:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 10240 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 32:

CCAAAAATTC AACCTTTAAG GGGAGTCCAG AGAGACTCAC AAGGTGTCAG ATAAAAGAAT	60
GGTGCAATTT TCTAGAGGAG ACTTTTGTAG TGTGCTCTCT TGTGTTGTAC GATTTTAACT	120
GAGGCCTTGC ACTAGCAAGG TCTTTTCTTT ATCTGGTCCC CTTAAAATTT AAGGAGGAAA	180
AGTTATGAAT CCCACATGTA AGAAGCGTTT GGGTGTCAAT CGGTTGGAAA CCATGAAGGT	240
GGTTGCACAA GAGGAAATCG CGCCACAATC TTTGAATTAG TCCTAGAAGG AGAAATGGTT	300
GAAGCCATGC GAGCAGGCCA ATTTCTTCAT CTGCGTGATC CGGACGATGC CCATCTCTTA	360
CGTCGTCCTA TTTCAATTTT GTCTATTGAC AAGGCAAACA AGCAGTGTCA CCTCATTTAT	420
CGGATTGACG GAGCTGGGAC TGCAATTTTT TCAACCTTAA GTCAGGGAGA CACTCTTGAT	480
GTGATGGGGC CTCAGGGAAA TGGTTTGTAC TTGTCTGACC TTGATGAGCA GAATCAGGTT	540
CTCCTTGTGT GTGGTGGGAT TGGTGTTCCT CCCTTGCTTG AGGTGGCCAA GGAATTGCAT	600
GAACGTGGAG TGAAAGTAGT GACAGTCCTC GGTTTTGCTA ATAAGGATGC TGTTATTTTG	660
AAAACGGAAT TGGCTCAGTA TGGTCAGGTC TTTGTAACGA CAGATGATGG TTCTTATGGC	720
ATCAAGGGAA ATGTTTCCGT TGTTATCAAT GATTAGACA GTCAGTTTGA TGCTGTTTAC	780
TCGTGTGGGG CTCCAGGAAT GATGAAGTAT ATCAATCAAA CCTTTGATGA TCACCCAAGA	840
GCCTATTTAT CTCTGGAATC TCGTATGGCT TGTGGGATGG GAGCTTGCTA TGCCTGTGTT	900
CTAAAAGTAC CAGAAAACGA GACGGTCAGC CAACGCGTCT GTGAAGATGG TCCTGTTTTT	960

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CGCACAGGAA CAGTTGTATT ATAAGGAGAA AATTATGACT ACAAATCGAT TACAAGTTTC	1020
TCTACCTGGT TTGGATTGA AAAATCCGAT TATTCCAGCA TCAGGCTGTT TTGGCTTTGG	1080
ACAAGAGTAT GCCAAGTACT ATGATTTAGA CCTTTTAGGT TCTATTATGA TCAAGGCGAC	1140
AACCCTTGAA CCACGTTTGG GGAATCCAAC TCCAAGAGTG GCAGAGACGC CTGCTGGTAT	1200
GCTCAATGCA ATTGGCTTGC AAAATCCTGG TTTAGAGGTT GTTTTGGCTG AAAAGCTACC	1260
TTGGCTGGAA AGAGAATATC CAAATCTTCC TATTATTGCC AATGTAGCTG GTTTTCAAA	1320
ACAAGAGTAT GCAGCTGTTT CTCATGGGAT TTCCAAGGCA ACTAATGTAA AAGCTATCGA	1380
GCTCAATATT TCTTGTCCCA ATGTTGACCA CTGTAATCAT GGACTTTTGA TTGGTCAAGA	1440
TCCAGATTTG GCTTATGATG TGGTGAAAGC AGCTGTGGAA GCCTCAGAAG TGCCAGTTTA	1500
TGTCAAATTA ACCCCGAGTG TGACCGATAT CGTTACTGTC GCAAAAGCTG CAGAAGATGC	1560
GGGAGCAAGT GGCTTGACCA TGATCAATAC TCTGGTTGGA ATGCGCTTTG ACCTCAAAAC	1620
TAGAAAACCA ATCTTGCCA ATGGAACAGG TGAATGTCT GGTCCAGCAG TCTTTCCAGT	1680
AGCCCTCAA CTCATCCGCC AAGTTGCCCA AACAACAGAC CTGCCTATCA TTGGAATGGG	1740
AGGAGTGGAT TCGGCTGAAG CTGCCCTAGA AATGTATCTG GCTGGGGCAT CTGCTATCGG	1800
AGTTGGAACA GCTAACTTTA CCAATCCTTA TGCCTGCCCT GACATCATCG AAAATTTACC	1860
AAAAGTCATG GATAAATACG GTATTAGCAG TCTGGAAGAA CTCCGTCAGG AAGTAAAAGA	1920
GTCTCTGAGG TAAACTGCAA TCAATCTGTT CTTGATTTTT TATTAGTTTG TAATATGAAT	1980
TTAGGAGAAT TTTGGTACAA TAAATAAAT AAGAACAGAG GAAGAAGGTT AATGAAGAAA	2040
GTAAGATTTA TTTTTTAGC TCTGCTATTT TTCTTAGCTA GTCCAGAGGG TGCAATGGCT	2100
AGTGATGGTA CTTGGCAAGG AAAACAGTAT CTGAAAGAAG ATGGCAGTCA AGCAGCAAAT	2160
GAGTGGGTTT TTGATACTCA TTATCAATCT TGGTCTATA TAAAAGCAGA TGCTAACTAT	2220
GCTGAAAATG AATGGCTAAA GCAAGGTGAC GACTATTTTT ACCTCAAATC TGGTGGCTAT	2280
ATGGCCAAAT CAGAATGGGT AGAAGACAAG GGAGCCTTTT ATTATCTTGA CCAAGATGGA	2340
AAGATGAAAA GAAATGCTTG GGTAGGAACT TCCTATGTTG GTGCAACAGG TGCCAAAGTA	2400
ATAGAAGACT GGGTCTATGA TTCTCAATAC GATGCTTGGT TTTATATCAA AGCAGATGGA	2460
CAGCACGCAG AGAAAGAATG GCTCCAAATT AAAGGAAGG ACTATTATTT CAAATCCGGT	2520
GGTTATCTAC TGACAAGTCA GTGGATTAAT CAAGCTTATG TGAATGCTAG TGGTGCCAAA	2580
GTACAGCAAG GTTGGCTTTT TGACAAACAA TACCAATCTT GGTTTTACAT CAAAGAAAAT	2640
GGAAACTATG CTGATAAAGA ATGGATTTTC GAGAAATGGTC ACTATTATTA TCTAAAATCC	2700

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GGTGGY TACA TGGCAGCCAA TGAATGGATT TGGGATAAGG AATCTTGGTT TTATCTCAAA	2760
TyTGATGGGA AAATrGCTGA AAAAGAATGG GTCTACGATT CTCATAGTCA AGCTTGGTAC	2820
TACTTCAAAT CCGGTGGTTA CATGACAGCC AATGAATGGA TTTGGGATAA GGAATCTTGG	2880
TTTTACCTCA AATCTGATGG GAAAATAGCT GAAAAAGAAT GGGTCTACGA TTCTCATAGT	2940
CAAGCTTGGT ACTACTTCAA ATCTGGTGGC TACATGGCGA AAAATGAGAC AGTAGATGGT	3000
TATCAGCTTG GAAGCGATGG TAAATGGCTT GGAGGAAAA CTACAAATGA AAATGCTGCT	3060
TACTATCAAG TAGTGCCTGT TACAGCCAAT GTTTATGATT CAGATGGTGA AAAGCTTTCC	3120
TATATATCGC AAGGTAGTGT CGTATGGCTA GATAAGGATA GAAAAAGTGA TGACAAGCGC	3180
TTGGCTATTA CTATTCTGG TTTGTCAGGC TATATGAAAA CAGAAGATTT ACAAGCGCTA	3240
GATGCTAGTA AGGACTTTAT CCTTATTAT GAGAGTGATG GCCACCGTTT TTATCACTAT	3300
GTGGCTCAGA ATGCTAGTAT CCCAGTAGCT TCTCATCTTT CTGATATGGA AGTAGGCAAG	3360
AAATATTATT CGGCAGATGG CCTGCATTTT GATGGTTTAA AGCTTGAGAA TCCCTTCCTT	3420
TTCAAAGATT TAACAGAGGC TACAACTAC AGTGCTGAAG AATTGGATAA GGTATTTAGT	3480
TTGCTAAACA TTAACAATAG CCTTTTGGAG AACAAAGGCG CTACTTTTAA GGAAGCCGAA	3540
GAACATTACC ATATCAATGC TCTTTATCTC CTGCCCCATA GTGCCCTAGA AAGTAACTGG	3600
GGAAGAAGTA AAATTGCCAA AGATAAGAAT AATTTCTTTG GCATTACAGC CTATGATACG	3660
ACCCCTTACC TTTCTGCTAA GACATTTGAT GATGTGGATA AGGGAATTTT AGGTGCAACC	3720
AAGTGGATTA AGGAAAATTA TATCGATAGG GGAAGAACTT TCCTTGGAAG CAAGCTTCT	3780
GGTATGAATG TGGAATATGC TTCAGACCCT TATTGGGGCG AAAAAATGCT TAGTGTGATG	3840
ATGAAAATCA ATGAGAAGCT AGGTGGCAAA GATTAGTACT ATAAGTGAAT ATGATTTGAG	3900
TGAATAGTAA GTTAAAAATC CTGATTTCAA GTAAAATCAG GATTTTTTCA TGGATGCAAT	3960
TTTTTTGGAG TCTGGTGTGA CGCGGAGGGT CTTTTGTCCT GTGTAAGTGA CAAAGCCGGG	4020
TTTTCCACCA GTTGGTTTAT TGAGTTTTTT GACTTCAATC ATATCTACCT GCACCAGATT	4080
CGACAGGCGC CCTTGAGAGA AGTAGGCAGC TAACTCTGCT GCGTCTGTCT TGAATGCAAT	4140
AGATGGGTCA AGATTTCTCTG AGATGACAAC ATGGCTTCCA GGAATGTCCT TAGCATGGAA	4200
CCAAAGTTCC TCCTTGCGGG CCATTTTAAA GGTCAATTCC TCATTTTGAA GATTGTTTCG	4260
TCCGACATAG ATGATGGTTT TGCCATCGCT TGCTAGATAT TGTTCCTAGTT TTTTGCCTTT	4320
CTGGATTTTC TCCCGTTGTC TTCTGCGGAT AAAACCTGTT TGAATCAATT CTTACGGAT	4380
TTACGCGATT TCTTCCAGTC CAGCTTGGTT GAGGACGGTT TCTACACTTT CCAGATAGAG	4440
AATAGTGGCT TTGGTTTCTT CAATCAAATC AGTCAAGTAT TTGACAGCTT CTTTGAGTTT	4500

CTGATACCGT TAAAAATAGC GTTGGGCATT CTGGTTGGGA GTCAGAGCCT TATCAAGCGC	4560
AATCATGATA GGTGGTTGG TATAGTAGTT GTCTAGGATA ACCTGGTCTT GGTGTTAGG	4620
CACTTGGTGG AGGAAGGTTG TCAGCAATTC TCCTTTTGA CGAAATTCCT CAGCGTTGTC	4680
TGTCGCCAGT AACTCTTTT CCTGTTTTT GAGTTTGTGT CGGTTTTCTT GAAGTTCATT	4740
TTCAACACGA CGAATCAGTT CACTGGCCTG CTGTTTGACG CGGTCGCGCT CAGCCTTATC	4800
CTTATAGTAG GTGTCCAACA AATCAGAAAG ATTTGCAAAA GGCTCTCCCA CCTGATTTGC	4860
AAAAGGAAGT GGACTGAAGG AAGTCTCAGT CAAGCATGGC TTGGTTTCTT GATTGAAAAA	4920
ATTTTCGAAA GCGGAAAGTT TTTCACTAAC CAGTATCCTT TCCAATTCAT TTGCCGTATC	4980
GCGTCCCAGA CCTTGAAAGA GGCTTTGAAG ATTTTGTGCT GTTAGTTCTT GGGTTTGACG	5040
GATTTCAAAG AGCTTTTCAT CCTTGATAGT AAAAGGATTG AGAGATTTTG TACTTGGCGG	5100
AGCGATATAG GTCGATCCTG GAAGTAAGGT GCGGTAGCTA TTTTGTGAAA AGCCGACGTG	5160
TTTGATAACT TCGAGGATTT TATGACTGCT TTTATCGACC AGTAGAATAT TACTGTGTTT	5220
CCCCATAATT TCGATAATCA AGGTAGCCTG GATATGGTCT CCAATCTCGT TTTTATTGGA	5280
AACTGTAATT TCCACAATAC GGTCAATTTT CACTTGCTCA ATCGACTCAA TCAGGGCCCC	5340
CTGCAAAATAC TTTCTCAAAA CCATGATAAA GGTAAGAGT TGAGCTGGAT TTTCAAAAGT	5400
CGTTTGGGTC AGCTGAATGC GTCCAAAAAC TGGATGGGCA GAAAGGAGCA GGCGATGGCT	5460
TTGGCGATTG CTGCGGATTT GCAAGACCAA CTCTTGTTC AAGGCTGAT TGATTTTCTG	5520
GATGCGACCA TTCACTAATT CGCTTCGCAA TTCCTCACT ATGTGGTGTA AAAAAATCC	5580
GTCAAATGAC ATCGTTCTCT CCTTGTGATT GTATTCCATA GTATTATATC AAAAAGGTAG	5640
AATAAAATCA TGGAAATGTG GTATAATAA GCCAAGTAA GAGAAACGAG AAGCACATGT	5700
ATATTGAAAT GGTAGATGAA ACTGGTCAAG TTTCAAAAGA AATGTTGCAA CAAACCCAAG	5760
AAATTTTGGA ATTTGCAGCC CAAAAATTAG GAAAAGAAGA CAAGGAGATG GCAGTCACTT	5820
TTGTGACCAA TGAGCGTAGT CATGAACTTA ATCTGGAGTA CCGTAACACC GACCGTCCGA	5880
CAGATGTCAT CAGCCTTGAG TATAAACCAG AATTGGAAAT TGCCTTTGAC GAAGAGGATT	5940
TGCTTGAAAA TTCAGAATTG GCAGAGATGA TGTCTGAGTT TGATGCCTAT ATTGGGGAAT	6000
TGTTTCATCTC TATCGATAAG GTCATGAGC AGGCCGAAGA ATATGGTCAC AGCTTTGAGC	6060
GTGAGATGGG CTTCTTGGA GTACACGGCT TTTTACATAT TAACGGCTAT GATCACTACA	6120
CTCCGAAGA AGAAGCGGAG ATGTTCCGTT TACAAGAAGA AATTTTGACA GCCTATGGAC	6180
TCACAAGACA ATAAACGAAA ATGGAAAAAT CGTGACTTGA TATCCAGTTT AGAATTTGCT	6240

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TTGACAGGTA TTTTACTGC TATCAAGGAA GAACGCAATA TGCGAAAACA CGCAGTGACG	6300
GCTCTAGTGG TCATCCTTGC AGGTTTTGTT TTTGAGGTGT CACGAATCGA ATGGCTCTTT	6360
CTCCTATTGA GTATTTTCTT GGTAGTAGCC TTTGAGATTA TCAACTCTGC TATTGAAAAT	6420
GTGGTGGATT TGGCCAGTCA CTATCACTTT TCCATGCTGG CTAAAAATGC CAAGGATATG	6480
GCGGCCGCG CGGTATTAGT GGTTTCTCTT TTCGCAGCCT TAACAGGCGC ATTGATTTTT	6540
CTCCCACGAA TCTGGGATT ATTATTTTAA ACAGTAAGAG GAAATTATGA CTTTAAATC	6600
AGGCTTTGTA GCCATTTTAG GACGTCCCAA TGTGGGAAG TCAACCTTTT TAAATCACGT	6660
TATGGGGCAA AAGATTGCCA TCATGAGTGA CAAGGCGCAG ACAACGCGCA ATAAAAATCAT	6720
GGGAATTTAC ACGACTGATA AGGAGCAAAT TGTCTTTATC GACACACCAG GGATTCACAA	6780
GCCTAAAACA GCTCTCGGAG ATTTTCATGGT TGAGTCTGCC TACAGTACCC TTCGCGAAGT	6840
GGACACTGTT CTTTTTCATGG TGCTTGCTGA TGAAGCGCGT GGTAAGGGGG ACGATATGAT	6900
TATCGAGCGT CTCAAGGCTG CCAAGGTTCC TGTGATTTTG GTGGTGAATA AAATCGATAA	6960
GGTCCATCCA GACCAGCTCT TGTCTCAGAT TGATGACTTC CGTAATCAA TGGACTTTAA	7020
GGAAATTGTT CCAATCTCAG CCCTTCAGGG AAATAACGTG TCTCGTCTAG TGGATATTTT	7080
GAGTAAAAT CTGGATGAAG GTTTCCAATA TTTCCCGTCT GATCAAATCA CAGACCATCC	7140
AGAACGTTTC TTGGTTTCAG AAATGGTTCG CGAGAAAGTC TTGCACCTAA CTCGTGAAGA	7200
GATTCCGCAT TCTGTAGCAG TAGTTGTGA CTCTATGAAA CGAGACGAAG AGACAGACAA	7260
GGTTCACATC CGTGCAACCA TCATGGTCGA GCGCGATAGC CAAAAGGGA TTATCATCGG	7320
TAAAGGTGGC GCTATGCTTA AGAAAATCGG TAGCATGGCC CGTCGTGATA TCGAACTCAT	7380
GCTAGGAGAC AAGGTCTTCC TAGAAACCTG GGTCAAGGTC AAGAAAACT GGCGCGATAA	7440
AAAGCTAGAT TTGGCTGACT TTGGCTATAA TGAAAGAGAA TACTAAGTAG AGGTAGGCTC	7500
ATGCCTGCTT CTGTGTTTTA CAGAAGGAGG ACTTATGCCT GAATTACCTG AGGTTGAAAC	7560
CGTTTGTCGT GGCTTAGAAA AATTGATTAT AGGAAAGAAG ATTTGAGTA TAGAAATTCG	7620
CTACCCCAAG ATGATTAAGA CGGATTTGGA AGAGTTTCAA AGGGAATTGC CTAGTCAGAT	7680
TATCGAGTCA ATGGGACGTC GTGGAAAATA TTTGCTTTT TATCTGACAG ACAAGGTCTT	7740
GATTTCCCAT TTGCGGATGG AGGGCAAGTA TTTTACTAT CCAGACCAAG GACCTGAACG	7800
CAAGCATGCC CATGTTTTCT TTCATTTTGA AGATGGTGGC ACGCTTGTTC ATGAGGATGT	7860
TCGCAAGTTT GGAACCATGG AACTCTTGGT GCCTGACCTT TTAGACGTCT ACTTTATTTT	7920
TAAAAAATTA GGTCTGAAC CAAGCGAACA AGACTTTGAT TTACAGGTCT TTCAATCTGC	7980
CCTTGCCAAG TCCAAAAGC CTATCAAATC CCATCTCCTA GACCAGACCT TGGTAGCTGG	8040

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ACTTGGCAAT ATCTATGTGG ATGAGGTTCT CTGGCGAGCT CAGGTTTCATC CAGCTAGACC	8100
TTCCCAGACT TTGACAGCAG AAGAAGCGAC TGCCATTTCAT GACCAGACCA TTGCTGTTTT	8160
GGGCCAGGCT GTTGAAAAAG GTGGCTCCAC CATTCCGACT TATACCAATG CCTTTGGGGA	8220
AGATGGAAGC ATGCAGGACT TTCATCAGGT CTATGATAAG ACTGGTCAAG AATGTGTACG	8280
CTGTGGTACC ATCATTGAGA AAATTCAACT AGGCGGACGT GGAACCCACT TTTGTCCAAA	8340
CTGTCAAAGG AGGGACTGAT GGGAAAAATC ATCGGAATCA CTGGGGGAAT TGCCTCTGGT	8400
AAGTCAACTG TGACAAATTT TCTAAGACAG CAAGGCTTTC AAGTAGTGGA TGCCGACGCA	8460
GTCGTCCACC AACTACAGAA ACCTGGTGGT CGTCTGTTTG AGGCTCTAGT ACAGCACTTT	8520
GGGCAAGAAA TCATTCTTGA AAACGGAGAA CTCAATCGCC CTCTCCTAGC TAGTCTCATC	8580
TTTTCAAATC CTGTGAACG AGAATGGTCT AAGCAAATTC AAGGGGAGAT TATCCGTGAG	8640
GAAGTGGCTA CTTTGAGAGA ACAGTTGGCT CAGACAGAAG AGATTTTCTT CATGGATATT	8700
CCCCTACTTT TTGAGCAGGA CTACAGCGAT TGGTTTGCTG AGACTTGGTT GGTCTATGTG	8760
GACCGAGATG CCCAAGTGGA ACGCTTAATG AAAAGGGACC AGTTGTCCAA AGATGAAGCT	8820
GAGTCTCGTC TGGCAGCCCA GTGGCCTTTA GAAAAAAGA AAGATTGGC CAGCCAGGTT	8880
CTTGATAATA ATGGCAATCA GAACCAGCTT CTTAATCAAG TGCATATCCT TCTTGAGGGA	8940
GGTAGGCAAG ATGACAGAGA TTAAGTGGAA GGATAATCTG CGCATTGCCT GGTTTGGTAA	9000
TTTTCTGACA GGAGCCAGTA TTTCTTTGGT TGTACCTTTT ATGCCCATCT TCGTGAAAAA	9060
TCTAGGTGTA GGGAGTCAGC AAGTCGCTTT TTATGCAGGC TTAGCAATTT CTGTCTCTGC	9120
TATTTCCGCG GCGCTCTTTT CTCCTATTTG GGTATTCTT GCTGACAAAT ACGGCCGAAA	9180
ACCCATGATG ATTCGGGCAG GTCTTGCTAT GACTATCACT ATGGGAGGCT TGGCCTTTGT	9240
CCCAAATATC TATTGGTTAA TCTTCTTCG TTTACTAAAC GGTGTATTG CAGGTTTTGT	9300
TCCTAATGCA ACGGCACTGA TAGCCAGTCA GGTTCCAAAG GAGAAATCAG GCTCTGCCTT	9360
AGGTACTTTG TCTACAGGCG TAGTTGCAGG TACTCTAACT GGTCCCTTTA TTGGTGGCTT	9420
TATCGCAGAA TTATTGGCA TTCGTACAGT TTTCTTACTG GTTGGTAGTT TTCTATTTTT	9480
AGCTGCTATT TTGACTATTT GCTTTATCAA GGAAGATTTT CAACCAGTAG CCAAGGAAAA	9540
GGCTATTCCA ACAAAGGAAT TATTTACCTC GGTTAAATAT CCCTATCTTT TGCTCAATCT	9600
CTTTTAAACC AGTTTGTGCA TCCAATTTTC AGCTCAATCG ATTGGCCCTA TTTTGGCTCT	9660
TTATGTACGC GACTTAGGGC AGACAGAGAA TCTTCTTTTT GTCTCTGGTT TGATTGTGTC	9720
CAGTATGGGC TTTTCCAGCA TGATGAGTGC AGGAGTCATG GGCAAGCTAG GTGACAAGGT	9780

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GGGCAATCAT CGTCTCTTGG TTGTCGCCCC GTTTTATTCA GTCATCATCT ATCTCCTCTG	9840
TGCCAATGCC TCTAGCCCCC TTCAACTAGG ACTCTATCGT TTCCTCTTTG GATTGGGAAC	9900
CGGTGCCTTG ATTCCCGGGG TTAATGCCCT ACTCAGCAA ATGACTCCCA AAGCCGGCAT	9960
TTGAGGGTC TTTGCCCTCA ATCAGGTATT CTTTATCTG GGAGGTGTTG TTGGTCCCAT	10020
GGCAGGTTCT GCAGTAGCAG GTCAATTTGG CTACCATGCT GTCTTTTATG CGACAAGCCT	10080
TTGTGTGCC TTTAGTTGTC TCTTTAACCT GATTCAATTT CGAACATTAT TAAAAGTAAA	10140
GGAAATCTAG TGCAGTAAA AATCAATCTC AAATGCTCCT CTTGTGGCAG TATCAATTAC	10200
CTAACCAGTA AAAATTCAAA AACCCATCCA GACagATTGA	10240

(2) INFORMATION FOR SEQ ID NO: 33:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13206 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 33:

CGCTTTATCG TGGACGTGGT CAAGCCGAGA ATTCATCAA GGAGATGAAG GAGGGATTTT	60
TTGGCGATAA AACGGATAGT TCAACCTTAA TCAAAAACGA AGTTCGTATG ATGATGAGCT	120
GTATCGCCTA CAATCTCTAT CTTTTTCTCA AACATCTAGC TGGAGGTGAC TTCCAACTT	180
TAACAATCAA ACGCTTCCGC CATCTTTTTC TTCACGTGGT GGGAAAATGT GTTCGAACAG	240
GACGCAAGCA GCTCCTCAAA TTGTCTAGTC TCTATGCCTA TTCCGAATTG TTTTCAGCAC	300
TTTATCTAG GATTAGAAAA GTCAACCTGA ATCTTCCTGT TCCTTATGAA CCACCTAGAA	360
GAAAAGCGTC GTTAATGATG CATTAAAGAA CAGTCGAGAT GAAAAAATCG TGTGACGCAC	420
CAAGGGAGGA GTCTGCCCTT TTGAGGAAAT CTAGCGAGGA AAAACGATAC TGGAACAGCA	480
GAAAGTAAAA CTGACCTCAT GAGGAGGAAG AAAGTGGCTC ATGAGGTCAG GGGTTTGTAA	540
AGTTACATCT AGTTGAGAGA GGTATGAATG ATTTGGGATT AATCATTTCT TGTTTTAAAT	600
CAGGAGAATA GTAACGATTT TTTCTTTTTT TGACGAACTC TATTCCTGAA CGATCAATCA	660
ATTTAATCAT GTACCTAATA TTAGAATTGT TTATCCCAA TTTATTGAA AGCTTCTCTA	720
AGCTATATCC TTGTTTCTA AGTTCATAGA TCTGAACTTT ATCATCATAA GTTAGTTTCA	780
TAATAAAAAC ACCCAAAG TTAGATTTTT TCTGTCTAAC TTTTGGGGGG CAGTTCATTC	840
AACACCTGAT ACTATGCGTT TTTCTTATTT GAAATACTTT TTAACAACC TCTTTATACT	900
CAATGAAAAT CAAAGTGCAA ACTAGAAAGC TAGCCTCAGG CTGCTCAAAA CAGTGTTTTG	960

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AGGTTGCAGA TGGAAGCTGA CGTGGTTTGA AGAGATTTTC GAAGAGTATT ACTTAATCTT	1020
CTTGATACTT TGAATAAGAA TAAATCCTAC AATCATCCCT ACCATATTTT GCATAAAATT	1080
CGGTAGAATT TCTGGGAGGG CTGCTGCCCA GCCATTTCATC AAAGCAGAAC CCAAGGCGTA	1140
GCCTCCTACC ATGGCAATAG TTGCTAAAAT AAGGCCTAAC CACTGACTTT TTCCTTTAAA	1200
TCCTGCGAAA AATCCCTGCA AGCCATGGTT GACCAAGCTA AAGAACATCC ACTGAGGGTA	1260
GCCTGATAAG AGGTCAATCA AGAACTTGC TAGTCCTCCG ACTACCGCTC CTTACGACT	1320
ACCAAAGTAA AAGGCCGCAA AGAAGACACC AGCATCTAAA AGAGTTAGAA TTCCTGTAGG	1380
TGTTGGGATT TTTAAGAAAT AACCTAGAAC CACAGAAAGG GCGGTTAATA GGGATACAAG	1440
GGCGATTTTA GTGTTTTGTG TTTGCTTCAT ATTGTCTTAC TCCATACTGA TCTGCTTGTG	1500
CAATAGCAGC ATAAACGAAA GCCTTAGAGC TTTCTACTGC TGGCAAAAGT TTATCACCTT	1560
TAACCAGGTG ACTGGCAATG CTAGAGsCAA AGGTACAACs TGCACCAGCA TTTTGGCCTT	1620
GGATAACTGG ATTTTCTAGG ATAGTAAAGG TCTGTCCATC ATAAAAGACA TCCACAGCCT	1680
TGTCCTGACT AAGACGATTG CCTCCCTTGA TAATGACTGt GCGGCTCCTA AATCATGCAA	1740
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(2) INFORMATION FOR SEQ ID NO: 34:

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- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 13104 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 34:

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ATAATACTCA TATAGAAAAC ACCTTTTAGA AAGATACCTA TGCTTCCATA TCCATTTTCC	2640
TATTTTTCOA GTATTTGGGG GGTTCGTAAG CCCCTGTCCA AACGTTTCGA GCTCAACTGG	2700
TTTCAACTTC TCTTTACCAG TATCTTCCTT ATCAGCTTGT CTATGGTACC CATTGCTATC	2760
CAAACAGCT CCCAGGAGAC CTATCCGCTA GAACTTTTA TCGATAATGT CTATGAACCT	2820
CTGACAGATA AGGTTGTCCA GGATCTCTCT GAACATGCTA CAATTGTCTGA TGGCACATTA	2880
ACTTATACTG GAACAGCTAG TCAAGCCCCT TCTGTTGTGA TTGGTCCAAG TCAAATCAAG	2940
GAATTACCTA AGGACTTGCA ACTGCATTTT GATACAAATG AGCTAGTCAT CAGCAAGGAA	3000
AGCAAGGAAC TGACCCGCAT CTCTTACCGA GCCATTGAGA CTGAGAGTTT CAAAAGCAAA	3060
GACAGCTTGA CCAAGCAAT TTCTAAAGAC TGGTACCAAC AAAATCGTGT CTATATCAGC	3120
CTCTTCCTAG TTCTCGGTGC GAGCTTCCTC TTTGGTTTGA ATTTCTTTAT CGTCTCTCTT	3180
GGAGCTAGCT TTCTCCTTTA TATCACCAAA AGATCACGCC TCTTTTCATT TAATACCTTT	3240

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AAAGAGTGCT ACCATTTTAT CTTGAACTGT TTAGGATTGC CGACTCTGAT TACACTTATT	3300
TTGGGATTAT TTGGCCAAAA TATGACAACC CTGATTACTG TACAAAATAT TCTTTTGT	3360
CTGTATCTGG TCACTATCTT TTATAAAACA CATTTCCGTG ATCCAAATTA CCATAAATAG	3420
GAGATTTTTA TGCCCGTTAC GATTAAAGAC GTGGCCAAGG CTGCTGGTGT TTCGCCTTCA	3480
ACCGTAACCC GTGTTATTC AATAAATCA ACCATTAGCG ACGAAACAAA AAAACGTGTT	3540
CGCAAAGCTA TGAAGGAACT CAACTACCAC CCAAACCTCA ACGCTCGTAG CTTGGTAAGC	3600
AGCTATACTC AGGTTATCGG ATTAGTTCTT CCTGATGACT CAGACGCCTT CTACCAGAAT	3660
CCTTTCTTTC CATCGGTTCT ACGTGGCATC TCTCAAGTCG CATCTGAAAA CCACTATGCC	3720
ATTCAGATAG CAACAGGGAA AGATGAGAAG GAGCGTCTCA ACGCTATTTT ACAAATGGTC	3780
TACGGCAAGC GTGTAGATGG GCTAATTTTT CTCTATGCCC AAGAAGAAGA CCCTCTCGTA	3840
AAACTCGTCG CAGAAGAACA GTTCCCTTTC CTTATCTTAG GTAAATCTCT ATCTCCTTTC	3900
ATCCCACCTG TCGACAACGA CAATGTTCAA GCTGGTTTGT ATGCGACTGA ATATTTTCATC	3960
AAAAAAGGCT GCAAACGCAT TGCCTTTATC GGAGGAAGTA AAAAGCTCTT CGTGACCAA	4020
GACCGTTTAA CAGGCTATGA ACAGGCGCTT AACATTACA AACTTACCAC TGACAACAAT	4080
CGCATCTACT TTGCCGACGA GTTCTGGAA GAAAAGGGCT ATAAATTTAG CAAGCGATTA	4140
TTCAAGCAGC ATCCACAAAT TGATGCTATC ATCACAACCG ATAGCCTCCT AGCTGAAGGT	4200
GTTTGTAAT ATATTGCCAA ACACCAGCTG GATGTCCCTG TTCTCAGCTT TGACTCGGTT	4260
AATCCCAAGC TCAACTTGGC AGCCTATGTC GATATCAATA GTTTAGAGCT TGGTCGTGTT	4320
TCCCTTGAAA CTATTCTCCA GATTATTAAT GATAATAAAA ACAATAAACA AATTTGTTAC	4380
CGTCAATTGA TCGCCCAACA AATTATCGAA AAATAAGAGA CTGGGCAAAA AGTCGTTAAA	4440
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AAAATCAAAG TGCAAACTAG GAAGCTAGCC GCAGGTTGCT CAAAACACTG TTTTGAGGTT	4620
GTAGATGAAA CTGACGAAGT CAGTAACCAT ACCTACGCA AGGTGAAGCT GACGTGGTTT	4680
GAAGAGATTT TCGAAGAGTA TTAATCACTA ATTATCTATC TCAACAAATC TTCCTAGAAT	4740
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AAATTCATTA AACTCTGCAC GTGTAATGAC AGTGATTAAA ACTGCCCTTC TCTCGTGATT	4860
ATAGGTTCTT TCTGCATCGT GGATCATGGT TGCTCCGCGG TGCAATTTTT TATGGATTTT	4920
TTCAATTACC TTCTCTGGAT GATTGTGCAC AATCATGGCC TGCATACGCT TTTGCTTAGT	4980
AAAGACTGCG TCTGTACAC GGCTAGAGAC AAAGATGGTA ATCATAGAAT AAAGAGCGTA	5040

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TTTCCAACCA AAGGTCAAAC CTGCTATCAG CATGATAGTT CCATTTACCA AGAAAGAAAT	5100
ACTACCGACA TTCTTACCCG TTTTCTTACG AATAGTCAGG CTGACGATAT CCGTCCCACC	5160
ACTGGAGATA TTGTTTCGAA GAGCAAAACC AATCCCCAAA CCCATAACAA CACCCCCAAA	5220
AAGGGAATTG ATAATGGGAT CCTCTGTCAA GGTGGCCACA GGGACAACT GGATAAAGAA	5280
GGAAGTCATA GATACCGTGA TAAAGGTAAA GACGGTGAAC TTATGGCCAA TCTGATACCA	5340
AGCTAAGACC ATCAAAGGGA AGTTAATGGC GTAGAAGCTT AGCGAAATCG GAATATGAAA	5400
ACCAAACCAG TGATTACTCA AGGCAGAGAT AATCTGTGCC AGACCTGTTG CACCACTCGA	5460
ATACACATGC CCTGGTTGGA AAAAGAAATT AACTGCTACT GCTGATAAAA AACCATAGAC	5520
CAGAGAGGCC GAAATCTTCT CATCATACTT TTCTCGAGAG ATACTTTGTA AGACACGTAA	5580
AATTTTATC TGATAAGCAA AGCGGCGCAG ATAATAGCGC CACCGCTTAA TTCGTTTGT	5640
TTGTTTCATC TTCTTCTACT TGTAAGCTGA GTTCCTCTAG TTGTTTGAGA GCGACTGTTG	5700
ATGGAGCTTG TGTCATTGGG TCAGTTGCCT TGTGTCTCTT AGGAAAGGCA ATGACTTCAC	5760
GGATATTTTC TTCTCCAGCA AGCAACATGA CAAAACGGTC AAGCCCGATA GCCAAACCAC	5820
CGTGTGGTGG GAAACCATAG TCCATGGCTT CAAGAAGGAA ACCAAACTGG TCATTGGCTT	5880
CTTCAGTTGA GAAACCAAGA GCCTTGAACA TGCCTTCTTG AAGGTCTTTT TGGTTGATAC	5940
GAAGGCTACC ACCACCAAGC TCATAACCGT TCAAGACGAT ATCGTAAGCA ATGGCACGAA	6000
CCTTAGCCAA ATCACCTTCT AATTCATGAG CAGTCTCTTC CTGTGGAAGT GTGAAAGGAT	6060
GGTGGGCGCT CATGTAGCGG CCTTCTTCTT CAGACCATTC AAACATCGGC CAGTCAACCA	6120
CCCAAAGGAA GTTGAACCTA TCATTATCAA TCAAGCCAAG CTCTTTAGCA ATACGTCCAC	6180
GAAGGGCACC CAGTGTTGCA TTAGCCACTT CAAGCGTATC CGCCACAAAG AGAACCAAGT	6240
CCTTATCTTC AAGAACAAGC GCTGTTGTCA ATTCTTCTTG GATACCAGTC AAGAACTTGG	6300
CAACTGGTCC GTTTAATTCT CCATCAACCA CCTTGACCCA AGCAAGACCT TTGGCACCAT	6360
ACTGTTTGGC TACTTCCGTC ATCTTGTCGA TGTCTTTACG TGAATAGTTG TCCGCAGCTC	6420
CTGTGACCAC AATCGCTTTT ACAGCAGGTG CTTCTGAAAA GACTTTAAAG TCTACACCTC	6480
GGACCACTTC TGTCAAGTCC TGAAGCAACA TGTCAAAACG AGTATCTGGC TTGTCAGAAC	6540
CGTAAAGAGC CATAGCATCA TCGTATTTCA TACGAGGGAA TGGTAGCGTT ACTTCGATGC	6600
CTTTTGTTC CTTTCATCAG CGCGCGATCA AGCTTTCTGT AATATCTTGG ATTTCTTGCT	6660
CAGTAAGGAA GGACGTTTCC AAGTCGACCT GAGTAAATTC AGGCTGGCGG TCTCCACGCA	6720
AGTCCTCGTC ACGGAAACAT TTAACGATTT GGTAGTAACG GTCAAAACCA GCATTTCATCA	6780

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AGAGCTGTTT CGTGATTGT GGACTTTGAG GAAGAGCGTA AAAATGCCCC TTATTAACAC	6840
GAGACGGCAC TAAATAATCA CGCGCCCCCT CAGGCGTTGA CTTAGAAAGG AATGGTGTCT	6900
CCACGTCGAT AAACCTCAAC TCATCCAAGT AGTTGCGGAT AGAGTGGGTC ACCTTGGCAC	6960
GAAGTTTAAG ATTTTCCAAC ATTTCTGGAC GACGAAGGTC AAGGTAACGG TAACGCAAAAC	7020
GTGTATCGTC ATTTGCCTCA ATGCCATCCT TAATCTCAAA TGGTGTGTGC TTAGCTGTGT	7080
TAAGCACAAT AAGAGCTGTC ACGTTTAACT CAACCGCACC AGTTGGCAAC TTATCATTTG	7140
CTTGTCACGC GCAGCGACCT GACCAGTCAC CTCAATAACA AATTCGCTAC GAAGGcTTTC	7200
AGCTGTTGCC ATAACCTCTG CAGATACTTT TTCAGGGTTG ATAACCAACT GCATGATTCC	7260
TTCACGGTCA CGAAGATCGA TAAAGATCAA ACCACCAAGG TCACGACGAC GGCCAACCCA	7320
TCCTTTCAAG GTTATTCTT GTCCGATGTG TTCCTCACGA ACACGACCAG CATACTACT	7380
ACGTTTCATT ATTTCTCTCC TCTTTTATTC TGTACTATT TTACCATAAA AGCGCAGCTC	7440
TTCATGAAAA TCATCAGAAA AGTTTGCCAG TCTTTAAAAG TCAGGTGAAA GCCCTAAAAA	7500
TTAGCGCTAA TACTCTTCGA AAATCTCTTC AAACCACGTC AGCGTCGCCT TACCGTATGT	7560
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GTCAGTTCTA TCCACAACCT CAAAACAGTG TTTTGAGCAA CCTGCGGCTA GCTTCCTAGT	7680
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TATTTTGAAT TTTTGCCCTG TTTACGCTTT TCAGCGATTT CGGCTGCCTT TCGAGGCAAG	7800
ACAATTTCCG TTATGTAAGC CGTCCCAAAA CGCAGTACAC CTGCAATAGG AGCAAAGACA	7860
ACTGCTAGAT AGTTATAGAA GAAATCGCCT TTGAAGGCAT AAGCTAGCGC TCCAATGATG	7920
AAAAATAGAA CGACTGCCTG AATCACTGCT AATAAAATTA CTCGTTTCAT GTGACCTCCT	7980
GACTCTATTA TAGCATGAGA ATCATCAAAA AGCCGACTAA ATTATTCAAA GCGTGAAGAG	8040
AAATACTGTA GACCAGACCT TTTCTGCTAA TGTAAGCCAA ACCCAAATA AAACCAAGGC	8100
TAAAATAGAC AAAAAATTGT TGCACATCAC CTGGAATATG AATCAAGGCA AATAGAAGAC	8160
TAGATACCAG AAGAAAAATC AGGGTTCGTT TACTATTGTC CTGCTTAGGA AAGAGATAGC	8220
GTGCTAACAT CCCTCTAAAA ACAATCTCTT CCGTCAAAGG AGCAAAAATA ACCACAGCAA	8280
AGAATGAGAA AAGTGGTTGA GACAAGGTCA AGTCTGTGCG TATTTGCTGA TTTACTGAAG	8340
GATCATCTGG CAAGAAGAAT TGAACGACCA GAGATAAGAA CCAAACCAAG ACAGGAAGCC	8400
AAATAAATCG ATTAAAGCCG CTCTTCTCAA TATGAACAGG AGCCTTCTGA TACCATTTGT	8460
AAATGCCGTA CACATATACT CCAGCCAAGG CCACATAGAG TAGAGTAACA GCATAGGGTG	8520
AAGCGCCTAA AGCAAGCGAC GCAGTCGCGA GCCCCTGAAT AAAGCCATAG ATAAATAAAA	8580

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AGGATAGAAG GGCTAGAAGA ATCCAGCCAA GGTTTTAAAG TAATTTCATA GATAACTCCT	8640
TTATTTGAAA TAACGTTTFA CCATAGGTAA CTGCATCACA TTGATATAAA CATGGATGGC	8700
TCCTACAAGC AAGAAAGCTA GTAACCTGAAT CTCTCCTGTC AAGAAAGAAA TGATAATAAG	8760
AAAAATATAT AAGGCTGGTA AGACATATTG GTGTAATTGG AATAAAATTC GAAAACTCTG	8820
TTCCAAATTA GCCTGACGCT CCCCTTCATC ATAAGAATTT ATATAGTTCA AGACATCCTT	8880
TGGTGTAGCG AAAAAATCCA AATCAAACCTG ACGAACAATC GCAATGGTTT TAAAAAGAGA	8940
TTTTTGAGCG ACTAAGAATA CCACAAAGAG TAAGAAAGAA AGGAAAAATG TTTGAGGGTT	9000
TGTATGCAAT ATAATCACCT CACTTAATGA AATAAAAATA GCCAATGGAA TCGCTACACC	9060
TGTAATATTA AAAGCAATGG TTCCAAACTC AAGATTCCGA TACATTTGCA CATAATAGGT	9120
TTCATTGAGA TCGTCATCCA TTTCTCTCTG ATACAAAGAA TGAAATTTTC TGCTTTTCTT	9180
TAAGAAATG AAAGTCAAAA ACATACTAAT GAAACCTATC AGTAAACAAA TAGCTGATAT	9240
CCATGGCATC AAGGCTTTTA CATCTAAAAT AATTTCGTGG GATTCGACAC GTGCCTTAAA	9300
CATCCCTACA AACATGCCCA AGAACCCCCC AAGACAATAG ACATCAAAAA TAACAATCTA	9360
CGTTTCTTTT TCATATTCAT TCTCCTTTTT CACTTGCTAG ATTTTTGGAT TTCTTTTCAA	9420
TCCATTCAAT TACTGGGATG AGAGCAAAGT AGACCCAAAC AAATTGGTCG CTTTGATAGG	9480
GATTAAACCA GCTTAGGTCC ATCCCAATCA GTAGAAATAC GCTGACTAAT AAAGCTATGA	9540
CCACTACATA ATAAATCACT TTATACTTGT TCATCACTCG TCCTCCTCCA AACGAAATAC	9600
CGATTGCACT GTTTCGTGA AAATTTGAGA TATTTTCAGG GCAATGATAA TGGATGGGGT	9660
GTACTCATCC CGTTCTAGTA GGCTAATGGT CTGTCTGGAA ACCCCTGCCA GTTTGGCTAG	9720
GTCCGTTTGA TTGAGACCAT CGCGAGCTCG AAGCTCTTTT AGACGATTTT TTAGTTGCAT	9780
GTTACACACC TACTCTCCGT CAAATTCAAC GGTTCGGATA TCCTCAATAC GTTGCAACTT	9840
GAATTTTCT TTTCCGTAT TATCTACACG TCGTAGCTTT ACCCATTCCT CATCAACATC	9900
CACAACTTCC CAGTTATCTG GCCCAATATA CACTCCCCTT ATAATTGGTT CCTTTCCAAT	9960
CATTTCTTGT AATAATCTCG ACATTCTGCG GTTTCCTTTC TCTTTTCGCT CAAGTCTTTT	10020
GATTTTATTC TCTAGTTTCT TGATTTTTTT AGAATTATTA GAATAAAGA AAATCATAAA	10080
TAGTATAAAT CCTAGTACCC ACATTATAAC TCCTTTCTGC TTCCTATTTT TTAACCTGAA	10140
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TGTCATTTTG CAAAAGAAAA AGGTCAGGAG TAGGTTCTCG ACCACTTTAT CTATCATTA	10260
TACTCTCTTA AAATCTCTTC AAACCACGTC AGCTTCACCT TGCCGTAGGT ATGGTTACTG	10320

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ACTTCGTCAG TTTCATCTAC AACCTCAAAA CCATGTTTTG AGCTGACTTC GTCAGTTCTA	10380
TCCACAACCT CAAAACCATG TTTTGAGCTG ACTTCGTCAG TTCTATCCAC AACCTCAAAA	10440
CCATGTTTTG AGCTGACTTC GTCAGTTCTA TCCACAACCT CAAAACAGTG TTTTGAGCAA	10500
CCTGCGGCTA GCTTCCTAGT TTGCTCTTTG ATTTTATTG AGTATAAAAT CCTAGTTTTT	10560
CAAAGATTTT TGAGAAGTTT TGGCTGATTG TCTCAAGTGA CACTTGCACT TCTTCTCGGG	10620
TTTGTTGTT CTTGACCGTC ACTTGTCCGC TTTGCACTTC GCTCTCTCCT AGGGTGATGA	10680
GGGTCTTAGC CGCAAAGACA TCGGCTGACT TGAAGTGAAG TTTTAGTTTA CGGTTGAGGT	10740
AATCAGCTC TGCTTTGAAA CCTTGTGGC GAAGAGCCTG TACCAATTCC AAGGCCTTGA	10800
TATTTGCCCC TTCGCCAAG ACTGCGATAT AGACATCTAG GCGTTTTTCG ATAGGGAGGG	10860
TCACACCTTG CTTTCAAGG ATGAGAAGCA GCGCTCTAC ACCAAGTCCA AAACCAAATC	10920
CAGCAGTTTC AGGGCCTCCA AAGTAAGCAA CCAAACCATC GTAGCGACCA CCCGCACAGA	10980
CGGTCAAGTC ATTGCCCTCA ATCTCTGTGA TAACTCGAA AATGGTGTGG TTGTAGTAGT	11040
CCAGACCAG CACCATATTG GTATCGATGA TGTAATCTAC TCCAAGATTT TCCAACATCT	11100
GACGCACAGC ATCAAAATGA GCTTGGCTTT CTTTCATCAAG AAAGTCCAAG ATAGACGGCG	11160
CATTCTCTAC TGCCACCTTG TCTTCTTTTT CCTTAGAGTC CAAGACACGA AGAGGATTTT	11220
CCTCCAAGCG ACGTTGGCTA TCCTTAGACA AGGTCTCCTT GAGCGGTGTC AAATAGTCAA	11280
TCAAGGCTTG GCGGTAGGCT GCACGGCTCT CAGGATTTCC AAGAGTGTG AGGTGCAATT	11340
TGACACCTTG AATACCGATT TCCTTCAAAA AATGGGCTGC CATAGCGATT GTTCCACAT	11400
CGGTAGCTGG ATTGCTAGAG CAAAACACT CAACACCAAT CTGGTGGAAT TGGCGCAAGC	11460
GCCCTGCCTG TGGACGCTCA TAACGGAACA TAGGTCCCAT GTAGTAGAAC TTGCTTGGCT	11520
TTTGCACTTC TGGGGCGAAA AGTTTATTTT CCACATAGGA ACGGACAACG GGTGCAGTTC	11580
CTTCTGGACG GAGGGTAATA TGACGGTCAC CCTTGTCTA AAAATCGTAC ATTTCTTGG	11640
TTACGATATC CGTTGTATCT CCGACAGAGC GACTGATAAC CTCGTAATGC TCAAAAATAG	11700
GCGTGCGCAC TTCTGCATAG TTGTAGCGTT TGAAATCTC ACGGGCAAAG CCCTCAACGT	11760
ACTGCCACTT AGCAGACTCA GCAGGTAAAA TATCCTGCGT TCCTTTTGGT TTTTGTAATT	11820
TCATAGGGAA TCCTCTTTAA ACTTAATAGT CTTATTTTAC CATAAATAGA GGGATTAAAA	11880
CAGTAAGAAA AAAATTAGGA TTTAGATATC ATTTTGTAGA TTAAGAATTG TCAAAAAAAT	11940
AGCTAGCAAG GAAAGACCAA CAAATAGCAT CCAAGTCAAC TGTATATTCC ATACGGCTAC	12000
TAGTGAAAA CAAGCTGTTC CCACAGGTAT GGATAAGGTA AACAATAGAC CTAAAAAATT	12060
ACTAGTACGA GCTAGAACCT CTGGAGCTAG ATTTTTCATG AGCATGGCAC TAATCTTGG	12120

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TTGAACTTTA CCAGACACAT ACAGAGTAAA GAAGAGAAAT AGCAAACCAA GCACGACTTG	12180
ATTGAATAAA TTAGCCAAAC CAACTAGACT AAGTCCTACG GTCTCCCACA TCATCAATCT	12240
AGGCAAGGAC TGCTTCCCAA AATAATCATT GCCCGTAAGG CTACTGATGA TGACTGATAC	12300
TAAAACACAG AATTGATTGA TAAATAGTGC CTCTGTATAA GAAAAATTCA AGAGAGAATG	12360
GCTCAAAAAG AAGATATTAT AAATTCCACC CAAAGCGCCA CCCAAGGAAT TAATAAGCAA	12420
GACAGCAAAG AGCATAAAAC CAAAGTTTTT CTGTCCACTT TTAAGAAAAA CGAGACGTAA	12480
ATTTTCGGTAA ATTGTTAGGA ACTGGTCTTT GATAGAAAGC TTCTCATTTT TTAAGTTTTC	12540
ACCATCAGCA GATGACATTG ACAGGCTCAA TTTGCTTTTT CCTAAAAAGA GGATAGTGGC	12600
TGATACTAGG AAAAAGCAGG CATTGATTCC CGAACGAGA GAAAAATTGT TGACCGATAG	12660
AGCTAAGAGC CAGACTCCGA AAGCTTGACC ACCAATAGCT GAAATATAGG TGATGAACTG	12720
TGAAAAAGAA TAAGCCTCCA TCAGATCATC TTCAGCTACT TTTTCCTTAA TAAGAGGCAT	12780
ACGCAGGCCA CCTGCAAAAT CACTGATGAT ATCACTAATG ACATTGATCA AACACAGGCT	12840
AGAAAAGGCA AAGAGACTAG CTTGCTGAAC AACTAGGGCT GCTAGAAAAA ATAGAACCGC	12900
CTGAAACAAA CCGCTATAGA CCATCCATTT GACCTTGTC CTCTGTGTAAT CTGCCCGAAT	12960
CCCTGCAAAA ACTGTAAAGA GGGTCGGAAG AATCATGACA ATATTGCGCA TAGCAACAGC	13020
AAAAGATGCT TGTGACAAGG TCGATGCATA GACGATAAAG ACCAGGTTGA AAATCGAAAC	13080
ACCAAAGCA TTGAAGAAGC GTGG	13104

(2) INFORMATION FOR SEQ ID NO: 35:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19250 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 35:

CCGGGCAAAT AGTTTGAAC TTTTCATCAT TTTCTCCTTT AAAACTTTCT CTCCATTATA	60
GACTCTTTTC AGAAAGTTGT CAACAGAATT TTCAGAATTT TTGAAAATTA TTTTTCAAAC	120
AACATCTTTG CAAAAATAT GAATATCGTA AGCGCGTCAT AACAAAGTAT CTATCATTCA	180
TGGAGCTCCT CCTGTATACT ATTAGTAAAG TAAATATTGG AGGATATTTT AATGCCACAA	240
CCTATTGTTT CTGTAGAGAT TCCACAATCT CGTCGTTTTG ATTCTAAAAA GAGAAATGAT	300
ATTCTrCTTA AAATTCGTAT TGGCAAGCTT GAAGTAAGTT TTTTTCATC TCTCAATCTC	360

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GAAATGATAG AACAGCTTTT GGATAAGGTG TTGCTCTATG ACAATTCATC TATCTAGCCT	420
AGGGCAGGTC TATCTCGTGT GTGGGAAAAC TGATATGAGA CAAGGAATCG ATTCACTGGC	480
TTATCTCGTT AAAACCCACT TTGAATTGGA TCCTTTCTCC GGTCAAATCT TTCTCTTTTG	540
TGGTGGACGT AAAGACCGCT TTAAAGTCCT TTAAGTGGAT GGTCAAGGAT TTTGGCTACT	600
ATATAACGC TTTGAGAACG GCAGACTGAC TTGGCCCAGT ACAGAAAAGG ATGTCAAAGC	660
TCTCGCACCT GAACAAGTAG ATTGGCTGAT GAAAGGCTTT TCTATCACTC CAAAAATATA	720
GTAGATTGAA ACTAGAATAG TACACCTCTG CTCTATAAAC ATTGTTAGAA ATCGATTTTA	780
CTGTCCTGAT CGATTGTGCC TGTATTATT TCATTTTACT ATAAATCCAT CAGAAAGTCG	840
TGATTTCTAT TGAAATGAGG ACTTTCTTTT TATACTCATC TGCTTTCAA AAGCACTCTA	900
GTCCATCTCC GATTAACGAT GGACTTTATC ACCTCCTTCT CCAGTCCTTG TATAACATCT	960
TGAAGTGTAT TCATGACATC TTCCAAAGTT CGAAAGGCTT TATTCTTAA TCCACGTTTA	1020
CGAATCTCTT TCCACACTTG TTCAATGGGG TTCATCTCTG GTGTGTATGG AGGAATAAAT	1080
GCAAAGCCAA TATTAGTCGG AATCTTTAAG GTACTTGATT TATGCCATAT AGCATGTGTC	1140
ATAACGAGTA AAAGATAATC ATCTGGATAA GCTTGTGAAA GCTCCTATTC CTAAAGCCCC	1200
TTTATAACCT CTGCGAGAG AGACTATTGA CTCAGCCCTT ACTTCATGCG GATGAAACCT	1260
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AAGCAGAGAA ACAAGGGATT ACGCTTTACC ACCATGATCA GTGTCGAAGT GGTTCAGTAG	1380
TACAAGAATT CCTAGGAGAT TATCTGGCT ATGTTTCAATG TGATATGTTG CGGCAGTAAC	1440
TTAGGACTTT AGTCCTCTAG TTCTGCCTAT GCGATAGCAG TCCAAGGTTT AGGAGTAAGG	1500
CGACGCTAAG CTTGGTAAAC TGCGAACAGC TAGAAGCTTA TCGTCAACTG GAAGAAGCTG	1560
CACTTGTGTTG ATGTTGGGCG CATGTGAGAA GGAAGTTTTT TGAAGTGCCC CCCAAGCAAG	1620
CAGATAAATC ATCCTTAGGA GCTAAAGGTT TAGCCTATTG TGATCAGTTA TTTTCCTTGG	1680
AAAGAGACTG GGAGGCTTTG CCAGCTGATG AACGGCTACA GAAACGTCAA GAACATCTCC	1740
AACCCCTACT GGAAGACTTC TTTGCTTGGT GCCGTCGTC GTCAGTTTTA TCGGGTTCAA	1800
AACTAGGAAG GGCAATTGAA TACAGCCTCA AGTATGAAGA AACCTTTAAG ACCATTTTAA	1860
AAGACGGACA TCTGGTCCTT TCCAATAATC TAGCTGAACG CGCCATTAAA TCATTGGTTA	1920
TGGGACGGAG TAAAAGAGTC CAGTGGACTC TTTTAGCCTA AGCTCAGTTT AAAAAACGA	1980
GGGTGGTTAT TTTTAAAAAA GCGAGGGTGG TTATTTTCTC AAAGTTTGA AGGAGCTAAA	2040
GCAAGAGCTA TTATTATGAG TTTGTTGGAA ACAGCTAAAC GTCATCAATT ATAGTGCCTT	2100
GAATCTATAA CAGTACGCAT CGACTGCTAA AATATTTCTA TAAATCAATT TTCCTTTCT	2160

AATCGATTTG TTCATATCTT ATTACAATCC ATTATAAATA GCGAGAAATA TCTATCCTAT	2220
CTTCTAGAAT GTCTTCCAAA CGAGGAACT CTCGTAAACA AAGAGGTTTT AGAGGCCTAT	2280
TTACCGTGGA CTAAAGTTGT ACAAGAAAAG TGCAAATAAG AAATCTCCAG ATTAGGAACT	2340
ATATATGAGT TCTCTAGTCT GGAGATTTTT CAATAGACTT CGTTATGGG CGGTACTTT	2400
CGAACTTTG AAAACTTCAA AAAACGGATT TTTATCGCTC TGAACATCAA AAAAGAAAGG	2460
ACGAAATTTG TCCTTTCTCA AGCTTAGCTT TTCTTCAACC CACTACAGTT GACAAAGAGC	2520
CCTTTATTCT ATCAAACATG AAGCGCAAAA ACAAGCCAAA AATCCGATAG AATGGCTATC	2580
CCTCGACTAT CAAGTAAGAC ATTTCCATCA AATACGTTCA ATTTTACTCT TGTTCTACTA	2640
AGAATTAATC ATCTCGTTTT GATTATTAA AAATATACAA TTCAGCTTTT CCTCCAAACT	2700
ATTTTATCCA CTATCCCTGT ATAGCTCTGT ATTATCTTAA CAACTTTAGT AGAGACATTT	2760
TCCTCAACAT AATCCGGAAC CGGTAATCCA AAATCCTCAT CTTGTGCCAA GCTAACAGCA	2820
GTTCAACTG CTGAAGAAG AGAATTTTCA TCAATGCCTG CCAAATAAA TCCTGCCTTA	2880
TCTAAGGACT CAGGACGTTT TGTACTTGTA CGAATACATA CAGCGGGAAA AGGATAACCT	2940
TGACTAGTAA AGAACTACT TTCTTCCGGT AAAGTTCCCG AATCAGATAC TACAACAAAT	3000
GCATTCATCT GTAAACAATT ATAGTCATGG AATCCTAGTG GCTCATGCTG AATCACACGT	3060
TTATCTAGTT TAAAACCGCT CTCTTGTAGC CTTTCTTTG ATCTAGGATG GCAAGAATAT	3120
AAGATTGGCA TATTATACTT TTCAGCTAAT TGATTAATTG CTGTAAAGAG AGAAATAAAA	3180
TTTTTATCTG TATCAATATT TTCCTCACGG TGAGCTGAAA GTAAGATATA ACCTCCTTTT	3240
TTCAATCCCA AACGTTTCATG GATATCTGAA GACTCAATAG CAGATAAATT TTTATGTAAC	3300
ACTTCTGCCA TAGGAGAACC AGTTACATAT GTGCGCTCTT TAGGTAAACC AACTCATGT	3360
AAATACTTAC GTGCATGTTT AGAGTATGCT AAGTTAACAT CTGAAATAAC ATCAACAATC	3420
CGACGATTAG TCTCTCCGG TAGGCACTCA TCTTTACAGC GATTGCCAGC CTCCATATGA	3480
AAAATTGGAA TATGTAAACG CTTGGCAGCA ATAGCTGATA AACAAGAATT TGTATCCCTT	3540
AAAATCAATA AAGCATCTGG TTTAATTGA TTCATCAATT TGTATGAAGT ATTAATAATA	3600
TTCCCTACAG TAGCACCAAG ATCATCTCCA ACAGCATCCA TGTATACGTC CGGAGTGTCT	3660
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GCCAAAATAA CATCAAAATA CTTTCGACAT TTAGTGATAA CACTACTTAG ACGTATAATC	3780
TCTGGACGTG TTCCACAAT AATCAATAAC TTAAGTTTGC CATTATCTTT AAAGTGAATA	3840
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GACACTTCAA AGTTCAGAAT AGGATACTCT TGACCGTTTT CATCCAGCCC TATCCTACGC	4080
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CTGCCAAGAG AGCCTTGCTT TCCTCTCTTG ACTTGGGACC GTCATCTACA TCAAAAACGA	17580
TATGCGAATG GATGTCTATC ATTTTATCTA CCCTCCATCA CATCCTGTAT AGCTGCTTTA	17640
ACTACAGCTA AACTACTATC ATCTATTTCC ATCACATAGA GGTTACTGTC TGGCATTGCA	17700
TAAGAAGGAA GATCCATCCG ACCTGTCCCT TTTAAATCTT GAGAATTTAC TTTATAATTC	17760
CCTCCACTTT CTAACGAGC ATTGACCAAA TTTATCATGG TCTCAAGTGG CATATTTGTT	17820
TGGATAGAAT CTTGCAAGCT ATTAATGATC GTACTATAAT TTTTCAGCAC TTCGGTTGAC	17880
GTAAATTTTT GAAGGATAGC CACAATCACC TTTTGTGAT GCGCGCCGCG GTCACGATCG	17940
CCATCTGCTA GGGAGTAGCG CTCACGAACA AAACCGAGAG CCTGTTCTGA ATCAAGATGA	18000
ACATTGCGCTG CAGGGTAATA CTTTCCATTC GTATGGGCAG TAAATTCCTG ATCATTATAA	18060

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ACATCAATTC CACCCAACAA ATCAATCAAT TTCAAAAACG AAGTGAAGTT CAATCGCACA	18120
TAGTAATTGA TATCCACTCC ATAGAGATTT TCTAAGGTGT GAATGGACGA ATCAACTCCA	18180
TAAATGCCCG CATGAGTCAA TTTATCTTTT TGATTATTTT CACCATCTGC GATTGGTACA	18240
TAGGCATCAC GTGGCGTTGT GGTCAAGAGG ATTTTCTTGG TATCTCGATT GACAGTCATC	18300
AGGATGTTGA CATCTGATCG CGACACCGAA CTAATAGGAC CATAGGTGTC AATTCCACTA	18360
ACATAGATAT TGAAAGACTG ACTCTTAGAC GTCTTAGGAG CTTCTACTTT TTTAGTGAAT	18420
CCCTTAGTAT AAATCTTTTT TATCTTCGAT GCGTAGTCTG GATACTCTGA CTCGATGATG	18480
TTTTCAAAGA CACTATTTAG GACAATGGCC TTAGTCTCCC CTGCAATCAA ACTCTTGTA	18540
GCTGCCAAGT AAGACGAACT CTGGTTGACC GTCAAATCGG TATTCTGACT TGACTTGATA	18600
TCAGCTAGTA ATTTCTGAAT ATTTTCATTA TTAGTCCCAG TCGGTGCTGT CACACTCGTC	18660
AGTTGCGTAA CATTTTCGAT CTCACTATCT GCTAAACAG CGACACTGAT TGAATATCT	18720
GAGTAATTAG AAGTCGCATT TAAACGATTG GTCAGTCCAA CAACTGCTG TACTGCAAAG	18780
AGCGACACAG AGCTGACAAG GATAGAGAAC ACCAACAGAA AAATAGTAA CTTTTCAGCT	18840
TTTTTATAGA TAATCAAGAG TAGCCCTACC AAGGCAACTA GTAGGACTAA CGCAGTTACC	18900
ACTAGATTAA GATATCTAAA AGCAAGGATA TTGTACTTAA AGATTAAGAA CAATAAAAAA	18960
CAAACTAACA ATAAATAAAT AGTCAGCAAA ACTATATTAA CACTTCGCTT CACTTTCTGT	19020
GAACGTGATT TTTTAAAACG TCTACTCATG ATTAATACCT ATACATTGAA CATTATACGA	19080
TTATATCACT TTTTACGGT AATGTCTACA CCTTTATTTT TACTATCTGC ATCTTTAAGT	19140
ATCTTAGTAG ACTTCCCGCG AAACAAAAAT ATAGTAAAT GAAATAAGAA CAGAACAAAT	19200
CGTTCAGGAC AGTCAAATCG ATTTCTAACA ATGTTTTAGA AGCAGAGGTG	19250

(2) INFORMATION FOR SEQ ID NO: 36:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21706 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:

AAAGTTGAAA GACTGCTAGC TGTTTTTGAT ACCAATCGTT TCCAACTACA GAGCAAACAG	60
TATACAAAGT TTGTTTTTGG ATGTAAGCTT CTGTATGGAC AATCCAAGA AAATCAAGAA	120
ATTGCTGACC TTCAATTTTT TGCCATTGAC CAACTGCCGA ACTTATCTGA AAAACGCATT	180
ACCAAGGAGC AAATAGAGCT TCTTTGGCAG GTTTATCAAG GTCATAGGGG GCAATATCTT	240

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GACTAAGAAG ATGATTATCG TATTTCTAAA TCCATTTTAA ACAACTAGCA TGGTATAATA	300
ATATGCAGGA AAATTTTGAA TTATGAGGAA GACTAGATGA ATTTATGGGA TATTTTCTTT	360
ACGACTCAGG CAACCGAGCC GCCCAAATTT GACCTTTTTT GGTATGTTAG CCTATTTACG	420
CTCTTAGCCT TAACCTTTTA TACAGCCCAT CGCTATCGTG AAAAGAAGGT TTACCAACGA	480
TTTTTCCAAA TCTTGCAGAC TGTTCAGTTA ATCCTTCTTT ATGGTTGGTA CTGGGTCAAT	540
CATATGCCAC TGTGAGAAAG CCTACCCTTT TACCATTGCC GTATGGCTAT GTTTGTGGTA	600
CTCTTGCTTC CTGGTCAATC CAAATATAAA CAATACTTTG CATTATTGGG AACATTGGG	660
ACATTAGCAG CCTTTGTTTA TCCAGTGCCA GATGCTTACC CTTTTCACA TATCACCATT	720
CTATCCTTTA TCTTTGGTCA TTTAGCACTC TTGGGGAAC CTCTAGTTTA TCTATGAGA	780
CAGTATAATG CGCGATTGCT GGATGTGAAG GGAATTTTTC TCATGACCTT TGCCCTAAAT	840
GCCTTGATTT TTGTGGTCAA TTTGGTGACA GGTGGCGATT ACGGATTTTT GACAAAACCG	900
CCATTGGTTG GGGATCACGG TCTAGTAGCT AATTATTTAC TTGTTTCAAT TGTGCTGGTA	960
GCTACTATCA GTTTGACTAA GAAAATCTTA GAATTCCTTT TAGCTCAAGA AGCAGAAAAA	1020
ATGATTGCAA AGGAAGCTTA ACACAGAGCT TTCTTTTTTG CTCTTAGAGA GTTTTACAA	1080
GCAGCTTATA AAATAAGAAT TTCTGAATAG ACAAACCAA AAAATGGCTG GGAAATTTAG	1140
GAAAAAGCA AGCAGGATTA AATTTTTTGT GTTATAATAT TTTGTGAATA GCTATGCCTA	1200
TGTTTAGCTA TGAATAATA CGAAGTGCGA AACTTGGAAG ATAGAGAGGA AGCGATGTAA	1260
TGGCTAGAGA AGGCTTTTTT ACAGGTCTAG ATATTGGAAC AAGCTCTGTC AAGGTGCTTG	1320
TGGCCGAGCA GAGAAATGGT GAATTAAATG TAATTGGCGT GAGTAATGCC AAAAGTAAAG	1380
GTGTAAAGGA TGGAAATATT GTTGATATTG ATGCAGCAGC AACTGCTATC AAGTCAGCCA	1440
TTTCCCAAGC GGAAGAAAAG GCAGGCATTT CGATTAAATC AGTGAATGTC GGCTTGCCTG	1500
GTAATCTTTT GCAGGTAGAA CCAACTCAGG GGATGATTCC AGTAACATCT GATACTAAGG	1560
AAATTACGGA TCAAGATGTT GAAAATGTTG TCAAATCAGC TTTGACAAAG AGTATGACAC	1620
CTGACCGTGA AGTCATTACC TTTATTCCTG AAGAATTTAT TGTGGATGGT TTCCAAGGGA	1680
TTCTGTACCC ACGTGGCATG ATGGGGTTC GCCTTGAAAT GCGTGGTTTG CTTTATACAG	1740
GACCTCGTAC TATCTTGCAC AATTTCGTA AGACGGTTGA GCGTGCAGGT GTTCAGGTTG	1800
AAAATGTTAT CATTTACCA CTAGCAATGG TTCAGTCTGT TTTGAACGAA GGGGAACGTG	1860
AATTTGGTGC TACAGTGATT GATATGGGG CAGGTCAAAC GACTGTCGCT ACAATCCGTA	1920
ATCAAGAACT CCAGTTCACA CATATTCTCC AAGAAGGTGG AGATTATGTA ACTAAAGATA	1980

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TCTCCAAGGT TTTGAAAACC TCTCGCAAAT TAGCGGAAGG CTTGAAACTG AATTACGGGG	2040
AAGCCTATCC GCCTCTTGCA AGCAAAGAAA CCTTCCAAGT AGAGGTTATT GGAGAAGTAG	2100
AAGCAGTCGA AGTGACGGAA GCCTACTTGT CAGAAATTAT TTCTGCACGA ATCAAGCACA	2160
TCCTTGAACA AATCAAGCAA GAATTAGATA GAAGGCGTCT ATTGGACCTC CCTGGTGGTA	2220
TTGTCTTAAT CGGTGGGAAT GCCATTTTAC CAGGTATGGT TGAGCTTGCT CAGGAAGTCT	2280
TTGGCGTCCG TGTCAGCTT TATGTTCCAA ATCAAGTTGG TATCCGTAAT CCAGCCTTTG	2340
CGCATGTGAT TAGTTTATCA GAATTTGCGG GTCAATTAAC AGAAGTTAAT CTTTGGCTC	2400
AGGGAGCGAT AAAAGGTGAG AATGACTTAA GTCATCAGCC AATTAGTTTT GGTGGGATGC	2460
TGCAAAAAAC AGCTCAGTTT GTACAATCAA CGCCTGTTCA ACCAGCTCCT GCTCCAGAAG	2520
TAGAGCCGGT GGCGCCTACA GAACCAATGG CGGATTTCCA ACAAGCTTCA CAAAATAAAC	2580
CGAAATTAGC AGATCGTTTC CGTGGATTGA TCGGAAGCAT GTTGTACGAA TAAAGAGGAA	2640
AAATAAATTA TGACATTTTC ATTTGATACA GCTGCTGCTC AAGGGGCAGT GATTAAAGTA	2700
ATTGGTGTCT GTGGAGGTGG TGGCAATGCC ATCAACCGTA TGGTCGACGA AGGTGTTACA	2760
GGCGTAGAAT TTATCGCAGC AAACACAGAT GTACAAGCAT TGAGTAGTAC AAAAGCTGAG	2820
ACTGTTATTC AGTTGGGACC TAAATTGACT CGTGGTTTGG GTGCAGGAGG TCAACCTGAG	2880
GTGGTCTGTA AAGCCGCTGA AGAAAGCGAA GAAACACTGA CGGAAGCTAT TAGTGGTGCC	2940
GATATGGTCT TCATCACTGC TGGTATGGGA GGAGGCTCTG GAACTGGAGC TGCTCCTGTT	3000
ATTGCTCGTA TCGCCAAAGA TTTAGGTGCG CTTACAGTTG GTGTTGTAAC ACGTCCCTTT	3060
GGTTTGAAG GAAGTAAGCG TGGACAATTT GCTGTAGAAG GAATCAATCA ACTTCGTGAG	3120
CATGTAGACA CTCTATTGAT TATCTCAAAC AACATTTGC TTGAAATTGT TGATAAGAAA	3180
ACACCGCTTT TGGAGGCTCT TAGCGAAGCG GATAACGTTT TTCGTCAAGG TGTTCAAGGG	3240
ATTACCGATT TGATTACCAA TCCAGGATTG ATTAACCTTG ACTTTGCCGA TGTGAAAACG	3300
GTAATGGCAA ACAAAGGGAA TGCTCTTATG GGTATTGGTA TCGGTAGTGG AGAAGAACGT	3360
GTGGTAGAAG CGGCACGTAA GGCAATCTAT TCACCACTTC TTGAAACAAC TATTGACGGT	3420
GCTGAGGATG TTATCGTCAA CGTTACTGGT GGTCTTGACT TAACCTTGAT TGAGGCAGAA	3480
GAGGCTTCAC AAATTGTGAA CCAGGCAGCA GGTCAAGGAG TGAACATCTG GCTCGGTACT	3540
TCAATTGATG AAAGTATGCG TGATGAAATT CGTGTAACAG TTGTTGCAAC GGGTGTTCGT	3600
CAAGACCGCG TAGAAAAGGT TGTGGCTCCA CAAGCTAGAT CTGCTACTAA CTACCGTGAG	3660
ACAGTGAAAC CAGCTCATTC ACATGGCTTT GATCGTCATT TTGATATGGC AGAAACAGTT	3720
GAATTGCCAA AACAAAATCC ACGTCGTTTG GAACCAACTC AGGCATCTGC TTTTGGTGAT	3780

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TGGGATCTTC GCCGTGAATC GATTGTTTCGT ACAACAGATT CAGTCGTTTC TCCAGTCGAG	3840
CGCTTTGAAG CCCCAATTTC ACAAGATGAA GATGAATTGG ATACACCTCC ATTTTTCAAA	3900
AATCGTTAAG TAAATGAATG TAAAAGAAAA TACAGAACTT GTTTTTCGAG AAGTTGCAGA	3960
GGCTAGTCTG AGTGCTCATC GAGAGAGTGG TTCGGTCTCT GTCATTGCAG TTACCAAGTA	4020
TGTAGATGTA CCGACAGCGG AAGCCTTGCT TCCGCTAGGT GTCCATCATA TCGGTGAAAA	4080
TCGTGTAGAT AAGTTTCTGG AAAAATATGA AGCTTTAAAA GATCGAGATG TGACTTGCA	4140
TTTGATTGGT ACCTTGCAAA GACGTAAGGT GAAAGATGTC ATTCAATACG TTGATTATTT	4200
CCATGCATTG GACTCAGTAA AGCTAGCAGG GGAAATTCAA AAAAGAAGTG ACCGAGTCAT	4260
CAAGTGTTTC CTTCAAGTAA ATATTTCTAA AGAAGAAAGC AAACACGGTT TTTCGAGAGA	4320
GGAACTGCTG GAAATCTGC CAGAGTTAGC CAGACTAGAT AAGATTGAAT ATGTTGGTTT	4380
AATGACGATG GCACCTTTTG AGGCTAGCAG TGAGCAGTTG AAAGAGATT TCAAGGCGGC	4440
CCAAGATTTA CAAAGAGAAA TTCAAGAGAA ACAAATCCA AATATGCCTA TGACCGAGTT	4500
AAGTATGGGA ATGAGTCGTG ATTATAAAGA AGCGATTCAA TTCGGTTCCA CTTTGTTCG	4560
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GCCTGTGTTT ACTTCAGTAA ATTCCTCACA GGAACCGGCT CTCCCAATGA ATCAACCTTC	4740
ACAGTCGGCT GGCACAAAAG AGAACAATAT CACCAGACTT CATGCAAGAC AACAGGAATT	4800
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TCATGTTTGA GCTGGAAATT TGAAAAAGGT AGCTTCTACC ATGTATTTCG TGACACCACT	5040
GAACGTTATT GTAAATGTTG AAGATATCCG TTTACCAGAT GAAGATCAAC AGGGTGAGTT	5100
CGGTTTTGAT ATGAAGCGAA ATAGAGTACG ATAATGATTT TTTTAATTCG TATGATTTAT	5160
AATGCACTGG ATATTTACTC CCTGATTTTG GTAGCCTTCG CTGTCATGTC TTGGTTTCCA	5220
GGTGCCTACG AATCCAGTTT AGGTCGTTGG ATTGTAGCGT TGGTGAAACC AGTGCTTGCT	5280
CCCTTGCAAC GCCTGCCTTT ACAGATAGCG GGTCTTGATT TATCTGTTTG GGTGCGATT	5340
GTTTTGTTTC GATTTTTCAG AGAAAACCTA GTGCGTTTTC TGGCGATGAT AGGATGAATA	5400
AAGGGATTTA TCAGCATTTT TCCATAGAAG ATCGTCCATT TCTTGACAAG GGAATGGAAT	5460
GGATAAAGAA GGTAGAAGAT AGCTATGCTC CTTTTTTAAC TCCTTTTATC AATCCTCATC	5520

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AGGAGAAGCT ATTAAGATT TTGGCCAAAA CCTATGGTCT TGCTTGTAGC AGTAGTGGG	5580
AATTCGTCTC GAGTGAGTAT GTTCGAGTTT TATTATACCC AGATTATTTT CAACCAGAGT	5640
TTTCAGATTT TGAAATATCT CTCCAGGAAA TTGTGTATTC CAATAAATTT GAACATTTAA	5700
CGCATGCTAA GATTTTAGGG ACAGTCATCA ATCAATTAGG GATTGAACGG AAACTTTTTG	5760
GAGATATCCT AGTAGATGAA GAACGGGCGC AGATTATGAT TAATCAGCAG TTTCTTCTTC	5820
TCTTTCAAGA TGGACTAAAG AAAATTGGTC GTATACCTGT TTCGCTGGAG GAACGTCCTT	5880
TCACCAGAA AATAGATAAG CTAGAACAGT ATCGAGAAGT GGATTTATCT GTGTCTAGTT	5940
TTCGATTAGA TGTCTTTTA TCAAATGTTT TGAACTATC TAGGAATCAA GCAAACCACT	6000
TGATTGAAAA GAACTTGTC CAAGTAAAT ATCATGTGGT AGACAAATCA GATTACACTG	6060
TTCAAGTTGG AGACTTGATT AGTGTGAGAA AATTTGGTCG CTTGAGATTA CTTCAAGATA	6120
AGGGACAAAC GAAAAAGAG AAGAAAAAA TAACCGTCCA GTTATTATTA AGTAAGTGAG	6180
GAATAGAATG CCAATTACAT CATTAGAAAT AAAGGACAAG ACTTTTGGA CTCGATTCAG	6240
AGGTTTGTAT CCAGAAGAAG TCGATGAATT TTTAGATATT GTGGTTCGTG ATTACGAAGA	6300
TCTTGTGCGT GCGAATCATG ATAAAAATTT GCGTATTAAG AGTTTAGAAG AGCGTTTGTC	6360
TTACTTTGAT GAAATAAAAG ATTCATTGAG CCAGTCTGTA TTGATTGCTC AGGATACAGC	6420
TGAGAGAGTG AAACAGGCGG CGCATGAACG TTCAAACAAT ATCATTCATC AAGCAGAGCA	6480
AGATGCGCAA CGCTTGTTGG AAGAAGCTAA ATATAAGGCA AACGAGATTC TTCGTCAAGC	6540
AACGTATAAT GCTAAGAAAG TCGCTGTTGA AACAGAAGAA TTGAAGAACA AGAGCCGTGT	6600
CTTCCACCAA CGTCTCAAAT CTACAATTGA GAGTCAGTTG GCTATTGTTG AATCTTCAGA	6660
TTGGGAAGAT ATTCTCCGTC CAACAGCTAC TTATCTTCAA ACCAGTGATG AAGCCTTTAA	6720
AGAAGTGGTT AGCGAAGTAC TTGGAGAACC GATTCCAGCT CCAATTGAAG AAGAACCAAT	6780
TGATATGACA CGTCAGTTCT CTCAAGCAGA AATGGCAGAA TTACAAGCTC GTATTGAGGT	6840
AGCCGATAAA GAATTGTCTG AATTTGAAGC TCAGATTAAA CAGGAAGTGG AAGCTCCAAC	6900
TCCTGTAGTG AGTCCTCAAG TTGAAGAAGA GCCTCTGCTC ATCCAGTTGG CCCAATGTAT	6960
GAAGAACCAG AAGTAGCTCC AATGCATCCG ATAGGTCCAA CACCAGCTAC AGAAACTGTT	7020
GATTCAATAC CGGGATTGA AGCACCAGCA GAATCTGTTA CAATTTTATA AGAAATATTC	7080
TGAGAACAAT ATCTTATCCT TATATTTCCA GCGAGCAGGA GATGGTGTGA GTCCTGTAAT	7140
CCCTATTGAT AAGATTATCC TCTCAAAAAC TCAAGTCTGA AGCTAGTAAG ATTTGACGTT	7200
TCCCACGTTA CGGGATAAGA GGGAGAAAAGA CTAAATCTTT TTCCGAATAA AGGTGGTACC	7260
ACGATTTTCG TCCTTTTGG AAGTCGTGGT TTTAATTTG TTATTATTTA TAAAGGAGAT	7320

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ACCATGAAAC TCAAAGACAC CCTTAATCTT GGGAAACTG AATTCCCAAT GCGTGCAGGC	7380
CTTCCTACCA AAGAGCCAGT TTGGCAAAAG GAATGGGAAG ATGCAAACT TTATCAACGT	7440
CGTCAAGAAT TGAACCAAGG AAAACCTCAT TTCACCTTGC ATGATGGCCC TCCATACGCT	7500
AACGGAAATA TCCACGTGG ACATGCTATG AACAAGATT CAAAAGATAT CATGTTCGT	7560
TCTAAGCTA TGTCAGGATT TTACGCACCA TTTATTCCTG GTTGGGATAC TCATGGTCTG	7620
CCAATCGAGC AAGTCTTGT AAAACAAGGT GTCAAACGTA AAGAAATGGA CTGGTTGAG	7680
TACTTGAAAC TTTGCCGTGA GTACGCTCTT TCTCAAGTAG ATAAACAACG TGAAGATTTT	7740
AAACGTTTGG GTGTTTCTGG TGACTGGGAA AATCCATATG TGACCTTGAC TCCTGACTAT	7800
GAAGCAGCTC AAATTCGTGT ATTTGGTGAG ATGGCTAATA AGGGTTATAT CTACCGTGGT	7860
GCTAAGCCAG TTTACTGGTC ATGGTCATCT GAGTCAGCAC TTGCTGAAGC AGAGATTGAA	7920
TACCATGACT TGGTTTCAAC TTCCCTTTAC TATGCCAACA AGGTAAAAGA TGGCAAAGGA	7980
GTCTAGATA CAGATACTTA TATCGTTGTC TGGACAACGA CTCCATTTAC CATCACAGCT	8040
TCTCGTGTT TGACGGTTGG TGCAGATATT GATTACGTTT TGGTTCAACC TGCTGGTGAA	8100
GCTCGTAAGT TTGTCGTTGC TGCTGAATTA TTGACTAGCT TGTCTGAGAA ATTTGGCTGG	8160
GCTGATGTTT AAGTTTGGGA AACTTACCGT GGCCAAGAAC TCAACCACAT CGTAACAGAA	8220
CACCCATGGG ATACAGCTGT AGAAGAGTTG GTAATTCCTG GTGACCACGT TACGACTGAC	8280
TCTGGTACAG GTATTGTCCA TACAGCCCTT GGTTTTGGTG AGGACGATTA CAATGTTGGT	8340
ATTGCTAATA ATCTTGAAGT CGCAGTGACT GTTGATGAAC GTGGTATCAT GATGAAGAAT	8400
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CGTGGTTGGT TTAACATC ATTTATCACA TCTGTTGCCA ACCATGGCGT AGCACCTTAC	9060

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AAACAAATCT TGTCACAAGG TTTTGCCCTT GATGGTAAAG GTGAGAAGAT GTCTAAATCT	9120
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TCTGACTTTA ACCCAGCTCA AGATACAGTC GCTTACGATG AGCTTCGTTC AGTTGATAAG	9360
TACATGACGA TTCGCTTTAA CCAGCTTGTC AAGACCATTG GTGATGCCTA TGCAGACTTT	9420
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TACCTTGATT TTGCCAAAGA TGTGTTTAC ATTGAAGGTG CCAAATCACT GGAACGCCGT	9540
CAATGCAGA CTGTCTTCTA TGACATTCTT GTCAAAATCA CCAAACTCTT GACACCAATC	9600
CTTCCTCACA CTGCGGAAGA AATCTGGTCA TATCTTGAGT TTGAAACAGA AGACTTCGTC	9660
CAATGTGTCAG AATTACCAGA AGTTCAAAC TTTGCTAAC AAGAAGAAAT CTTGGATACA	9720
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GCGGAAGCAG TCGCAGAAGG ATTTGAAGAG AAATAAGATT GAAAAGTCTA GGCAAAATTC	10140
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GAATACCTGA TATGATGCGT TTTTATTFTA TTTTAAAAAT TTGCGAGGTA TGACTTTTTA	10260
TACTCAACAA GAATCAAAGA GAACTTAGC AAGCTAACAG TAGTAAGATA AAATAGGAAT	10320
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GTTATTTCTG GTTCTGAAA AGTATTATAT TTTATTTTAT ATTATACAAA TTTTATTTT	10440
ATAATATCAG AACATACTTT TTTTAAAGC AAATATGATA CAATTTTATT TGAAAAAAT	10500
AAAAAAGGAG ATTTTATTAT AAAATTAAAA AGACTTGCTT TAATTAGTGG TATCGTCGGT	10560
CTTGTGGGAG GAATTTTACT TCTTATTGGT CCTTTTGTCT TGTGGGAAT AGCGGTAAAC	10620
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CTCTGAATG CCTTGAAGAT TGCAAATCTT GTTCTTGGA TCATTGCTAT TGTTTACTAT	10740
AAAGGAGATA AGCGGTAGG TGCAGCTCCG TCTGTACTAA TGATTGTTTC TGGTGGACTT	10800
AGTCTCATTC TATTCCTTC TTAGGATGGG TTGGGGGAT TTTTGCTATT ATCGGAGGAT	10860

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CTCTATTCCT TTCAACATTG AAGAAATTCA AATCAGAAGA ATAAAAGGTA TTTTAGCATG	10920
AAAAGAACAA AAAAGTTTAT CGGTATAGGA GTAGCTCTAT TATCTCTTTC TCTTCTAGTT	10980
GCATGTGGAA CATAAAGTTC AAAGAATACT TCAACAAGTA ATGATGAGAA GACAGTAGCA	11040
ACATCCAATA GTTCAAAAGA AACAATCACT TTCGATACAC CGGTTGTAAC AGACGATGCG	11100
ATTGAATCAA TACGCACTTA TGCAGATTAT ATAGATCTTT ATAAAAATAT TTTTGATGAT	11160
TATTTTACTA AAGCTGAGGA AGGTTTCAAA GGCATAGCTA TGGAAAATAA TGACTCGTTT	11220
ACTAAACTAA AAGAGTCAAC TCAAAAATTA TTCGATGCGC AGAAAAAAG GTTAAATAAT	11280
GAAGATAGAA TAGAAACAAC CAAAAACAAT GTGATTGCCA AACATTGTCA AACAGTCCTT	11340
TCCTTTTGTG TTTTGACTAG CTTTTTGTG AAAAATTGTG TAAAATAGAA TAGATAAACG	11400
AGGGGAAACC TCGGAAAATT TAAAGGAGAA TCCATCTAAT GGTAAAATTG GTTTTGTCTC	11460
GCCACGGTGA GTCTGAATGG AACAAAGCTA ACCTTTTCAC TGTTTGGGCT GATGTTGATT	11520
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TCGAATTGTA CCAAGCTTAC ACTTCAGTAT TGAAACGTGC TATCAAAACA ACTAACTTGG	11640
CTCTTGAAGC TTCTGACCAA TTGTGGGTTT CAGTTGAAAA ATCATGGCGC TTGAACGAAC	11700
GTCACCTACG TGGTTTGACT GGTAAAAACA AAGCTGAAGC TGCTGAACAA TTTGGTGATG	11760
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ATGAGCACTC AGCTCACACA GACCGTCGTT ACGCTTCACT TGACGACTCA GTTATCCCAG	11880
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CTCCAGCTCT TAAAGATGGT AAAAACGTAT TCGTAGGAGC TCACGGTAAC TCAATCCGTG	12000
CCCTTGTAAG ACACATCAAA GGTTTGTCTG ATGACGAGAT CATGGACGTG GAAATCCCTA	12060
ACTTCCCACC ATTGGTATTG GAATTCGACG AAAAATTGAA CGTCGTTTCT GAATACTACC	12120
TTGGAAAATA AAAAATTGTA AGTCTAGAAT TGATTTCTAG GCTTTTATG TTAGTATGGA	12180
AGTATGATAA GGAATAAAAA ACAAGATTAT GTACTGGCCT ACAAGCAACC AGCTTCAACC	12240
ACTTACATGG GTTGGGAAGA AGAAGCTTTA CCGATAGGCA ATGGTTCTTT AGGAGCAAAA	12300
GTATTTGGCC TTATAGGGGC TGAACGGATT CAATTTAATG AAAAAAGTCT CTGGTCTGGA	12360
GGTCCACTTC CTGATAGTTC AGATTATCAG GGTGGAATC TTCAGGATCA GTATGTTTTT	12420
TTAGCTGAGA TTCGGCAGGC TTTGGAGAAG AGAGATTACA ATCTGGCTAA GGAAGTGGCT	12480
GAGCAGCACC TAATTGGGCC AAAAACGAGT CAATATGGGA CCTATCTGTC TTTTGGGGAT	12540
ATTCACATTG AGTTCAGCCA GCAAGGTACG ACTTTGTCTC AGGTGACGGA CTATCAGAGA	12600

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CAGCTGAATA TTAGTAAGGC ACTTGCGACG ACTTCTTATG TCTATAAGGG AACGCGATTT	12660
GAACGTAAAG CTTTTCGAG TTTTCCAGAT GATCTCTTGG TTCAATGTTT TACTAAGGAA	12720
GGGTTGAAA CTCTAGATTT TACTATAGAA CTATCCTTGA CCTGTGATTT GGCTTCTGAT	12780
GGAAAGTATG AGCAGGAAAA ATCTGATTAC AAGGAGTGTA AGTTGGATAT TACTGATTCT	12840
CATATCTTGA TGAAGGGAAG AGTTAAGGAT AATGATCTGC GGTTCGCTAG TTATCTAGCT	12900
TGGGAAACGG ATGGAGATAT TAGAGTTTGG TCAGATAGGG TTCAGATATC AGGAGCCAGT	12960
TATGCCAATC TCTTCTTGGC CGTAAGACG GATTTTGCCC AAAATCCTGC TAGCAATTAT	13020
CGCAAGAAAC TAGATTTAGA GCAACAGGTG ATAGACTTGG TGGACACAGC TAAAGAAAAG	13080
GGCTATACCC AATTGAAATC AAGGCATATC GAGGACTACC AAGCCTTATT CCAGCGTGTT	13140
CAATTGGATT TGGAAGCTGA TGTGACGCA TCCACTACAG ATGATTTGTT AAAAAATTAT	13200
AAGCCACAAG AAGGGCAGGC TTTGGAGGAG CTGTTCTTCC AGTATGGACG GTATTTATTG	13260
ATTAGTTCGT CCAGAGACTG CCCAGATGCT CTACCAGCTA ACCTACAGGG AGTCTGGAAT	13320
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CAAATCACTC AATCTGGTCG AATCAGGGAG TGGTATGAGG AGGAAGAGCA GTATTTTCAA	13980
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AATCTCTTTA GCTACAAGGG ACAAGAGTAT ATTGAAGCGG CGCGTGCTAG CCTCAATGAT	14100
CGTGAGATG GCGGCACAGG CTGGTCCAAG GCTAATAAGA TCAATCTCTG GGCGCGTTTG	14160
GGAGATGGCA ATCGAGCCCA TAAATTATTG GCAGAGCAGT TAAAGACATC CACCTTGCAA	14220
AATCTTTGGT GTAGCCATCC TCCTTTTCAG ATAGATGGTA ATTTTGGTGC TACTAGTGGC	14280
ATGGCAGAAA TGTTACTCCA GTCTCATGCA GCTTATCTGG TACCTCTAGC TGCCCTACCT	14340
GATGCTTGGT CAACAGGTTT TGTTCAGGC TTAATGGCAC GTGGACATTT TGAAGTGAGC	14400

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ATGAGCTGGG AAGATAAAAA ACTCTTACAG TTGACCATTT TATCAAGGAG TGGAGGAGAT	14460
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AAAGCGAAAT GCATGGGGAA AGATTGTATT TCGGTGGCAA CAGCAGAAGG TGATCTTGTT	14580
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TTTAAGAATA TAAGCAGTTT TCAACTAGTT GAAAAACGT TATAATGATA ATAGGAAGTA	14700
ATACTCAATG AAAATCAAAG AGCACAACT AGGAAGCTAG CCGCAGGTTG CTCAAAACAG	14760
TGTTTTGAGG TTGCAGATGG AAGCTGACGT GGTTTGAAGA GAGATTTTCG AGGAGTATAA	14820
TTTGTGTGAT AGAGGGTGGG TCTGATGGCT TATATTGAGA TGAAACACTG TTACAAGCGT	14880
TATCAGGTTG GGGACACGGA GATTGTGGCC AATTGTGATG TGAATTTTGA GATTGAAAAG	14940
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GATGCCAGTG TCAAGGATGT GGTGCTCAAC CAGCATCCTC AGGATATTGA CAGTTTGAG	15540
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CAAGGGGCGT TTTTATCCA TCTTGATCCT GATGATGTTG GGATCTCTAG CCTTAGTAGG	15660
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TATGGGCTAC GCAGGAAGTG GAAGTGGGAC TCTGACAGCC TATGGGGTGA TTTTACCTAG	16140

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TCAATTTGAT CAGAAAGTCT ACAATATAGC TCGTTTGAAA TATCAAGATT TAGCGGGTTT	16200
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TCTAGACAAG GGGCAAGAGA CCCTTGACAA GGCTCAGACT AATTTCAGG AAGGCAAGCG	16380
TCGTTTAGCA GCTGCTCAAG CTCGTATACA GGCTCAAGAA AGTCAACTAG CCTTGTTC	16440
TCAAGTTCAG AGAGAGCAGG CTAGTGCTCA ACTTACCCAA GCCAAGCAGG AATTGGGCAA	16500
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AGTGGGCAAT ATCTTTCCTG TGGTACTTTA TGCCGTAGCA GCCATGGTGA CCTTTACGAC	16740
CATGACTCGC TTTGTAGACG AAGAGCGAAC TCATGCAGGG ATTTTAAAGG CCTTGGGTTA	16800
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CCGCAACATC TTTCGTTATA AGCAGAGAAT GTTGATGACA ATCTTTGGTG TGGCAGGTTC	17220
TGTAGCTCTG CTCTTGCAG GTTTGGGAAT CCAATCTTCT GTAGCAGGAG TTCCGTCTAA	17280
ACAGTTTCAA CAAATCCAAC AGTATCAGAT GCTTGTCTCT GAAAATCCTA GTGCGACCAA	17340
TCAGGACAAG GTAGAGCTAG CAGAAGTGT GAAAGGGCAG GAGATACTAG CCTACCAGAA	17400
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TCTTATGATG ATAGAGAAGG AAGATTTGAC TCCCTTTATC CATCTTCAAC ATCATCAGCA	17520
GGAGCTGACA TTAAAAGATG GCATCGTTAT TACAGCTAAA CTCGCCCAGC TGGCAGGTGT	17580
CAAGTTGGG CAGACTTTAG AAATTGAAGG TAAGGAACTA AAGGTCGTTG CTATTACTGA	17640
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GCTACCCCAA GCCAACACTT ATCTGGTCTC ATTAAGGGAT ACCAGTGCAA CTAGTATCGA	17760
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AGCCATTCTGA CTCTTCGACT CTATCGCTAG CTCACTCAAT CAGACCATGA CCATCTTGGT	17880
CATCGTATCG GTTCTATTAG CTATTGTCAT CCTTTACAAT CTGACCAATA TCAACGTAGC	17940

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AGCTGGTTTC TATTTACACC AATTTTTGAT TCAAATGATT TCGCCTGCGA CTATTCTCTT	18120
TTATCCGCAG GTAGGCTGGG AAGTCTATGT AATCCCAGTG GCAGCAGTAA GCATCATTTT	18180
GACCTTGCTT GGTTCCTTCG TCAATTATTA TCTGAGAAAG GTTGATATGT TAGAAGCCCT	18240
GAAATCTGTA GAGTAAGGTA GTTATTTTTA GCTGATTGAA CTTCTATTTA CTAATATTCA	18300
AAAACTCTCC GTTTCAAAGA GCAGGGAACCT CTTTGTGACA GAGGATTTTT TCTATAGGGC	18360
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TTCTGTGATC AAGAGGGCAT AATCGCGCCC GAAAGAATGG TCAAAGTAGT CTGAAAGCAT	18540
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TGAAACAGTC AATACGACCG TGTGTGCCAG TCCAGCCAAT TCTTCATTAA AACGACGTGT	18660
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ATCAAAATCA GCCAGAGATT TTTTAGAAAAG ATCTGTTGTA GTAAGAGAAA AATCAAGCGC	18780
CTTGTCGCCG ACTTGTAGTT GTTTACCTGT AAAGCTCACA GGATTTCCGA GAAAAGTTAC	18840
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GGGATGTTG TGTCTTGAGA AACAGTTTTT ATTGGACGGT CATCCACACT TGATTCTACA	19140
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GTTCCTTCTT CTTCACTATT GATTTCCAG ATGTAAGCAC TTGGGACACC ATAGGCTTTA	19260
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TTTTTTTCAT AGAATTCTTT ATTGTTAGGG TCTTTGGCGC TCAATTGTTT GGCGATATTT	19440
TTAGCAAAAA TAATACCGTT TTCAAGGTTA AGCCAAGCGT GTGGGTCTTC TTTTCCTTTT	19500
TCATTTTGAC CTTCAAGGTA GATAACATCA ACGCCGTCGC TGACTGCGAA GTAGTCTTTG	19560
TTTTCAGTTT TCTTGGCATT TTCTACCAAT TTTGTAAACC AAGCATTGCC ACCTGTTTCA	19620
AGGTTGATAC CGTTATAGAA AATCAAATTA GCCTCAGAAG TTTTCTTAAC GTCTTCAGGA	19680

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AGTGGTTCGT ATTCGTGTGG GTCTTGCCCA ATCGGAACGA TACTATGAAG GTCAATTTTG	19740
TCACCAGCAA TATTTTATAGT AATATCAGCG ATGATTGAGT TTGTAGCAAC AACTTTTATAGT	19800
TTTGTACCAG AAGTTGTATC TTTTTTCCG CTAGCACATG CTACAAGAAT GATTGCAGAA	19860
AGAAAGAGAA CGAGTAATGT ACCTAATTTT TTCATTAGAT CCTCCAATTT ATTAGGGCTT	19920
TGCCCCTTAT TTTAACAAAT GTTTATTTTT CAGTTTCAAA TATCGTTGTT TGGGAGCGAT	19980
AAAGAAGCTA ATGAGAAAGA AACTAGCAGC TGTAAGCACG ATACTAGAAC CTGCCGCAAC	20040
ATTAAACTA TAGCCAATAA AGAGTCCCAA AACTGAAGCA GTAGCTCCGA AGGTTGAGGA	20100
AAGGAAAATC ATACTTTTCA GACTATTAGC ATACAGATAA GCAGTTGCAG CTGGGGTAAT	20160
CAGCATGGCT ACAATCAGGA TAGTTCGAC ACTTTGCATG GCTGTCACAG ACACGAGAGT	20220
CAGGAGTACC ATGAGAAGGT AGTGATAGAA ATTGACAGGC ATTCCCATGG CTTTAGCCAA	20280
GAGTTCATCA AAGGAAGTTA TCAAGAGTTG CTTGAAGAAA ATCCAGATTA ACAAGAGGAT	20340
AGCTGCCCC ACACCCATAG TAATAAACAT ATCCGTATCT TGGACGGCCA GGATATTACC	20400
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TTTGATGTAG GTAATGATGA TGGCAGCTAG CAATCCAAAG ACAATGGCTC CGATAAAGAA	20580
GTCAAGGCCC AAGATGAAGG ATAGGGCTAC ACCTGGTAAG ACAGCATGTG AAATGGCATC	20640
TCCCATGAGT GACATCCCGC GTAGAATAAT GAAACATCCC ACAGCTCCAG CTACAATCCC	20700
GACGACAATA GCTGTATCA AGGCATTTTG TAGGAAATGG AATTTTGTCA ATCCATCGAT	20760
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TCAATCCCAG CAAAGGGTTC ATCCAAGAGG ATATAGTCGG CTTCTGCAC CAAACATCTG	21060
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TCAGCTAGGC CGACGATTC AAGGGCCTCT TGCACTTTCT TCCAATGTTT AGCCTTTAAA	21180
CTTCGAAAGA GAGGAATAGA GGGAAATAGT CCTAACGAGA CGCATTCCTT GACCTTGATG	21240
GGAAAGTTGT AGTCGATATT GATTTTTTGT TCGACATAGG CAATTCGGTG TAAGGATTTT	21300
TTAACTTCCT TGTCATCGAG AAATGCCTGA CCTTGATGTG GGATAATTCC CAACATACCT	21360
TTTAATAGTG TTGATTTCCC AGCGCCGTTT GGACCAATGA TGCCGGTAAT TGTGGTCCA	21420
TGGAGCACTA GTGAAATATC CTTAAGTGCC AACGTTTCTT TGTAGGAGAC ACTGAGGTTT	21480

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TCGATACGTA TCATAAACTT GTATTCCTCC TGTCTCTTAA TATACATTAA AAAAAAATT	21540
AAGTCAAGTT AATTTTGGAA AAAATTAAAA TAATAACTGA AAAATAGATT CTAAAGATAA	21600
CTTTCAGGAT AAATTCTTAA ATTATAAAAC GCATAGTATC AAGTGTAATA AACTTGGAAT	21660
TATGCGTTTT ATCATGGAAA GATTTTATAT AATAGCTAAA AAATAA	21706

(2) INFORMATION FOR SEQ ID NO: 37:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 6171 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37:

GATCCCCAGG AAAAACCAGG GTTTTCCCAA TCAATCGTTA CTGTCATATT CCACTCCTTA	60
TTCTAAAAAC CTATTTCTTA TATTCTACAC TATTTTCTA AAATAGCAAG TATATTTGT	120
AATTTTCAGA AAATTCTCC AATAAAACC AACTCTTAGA ACTGATTCTT CATTTCACTT	180
ATTTATCTTC AGTAACTACT TCCTGAAGAT AAGCGTCAAA AACTTCTTCA TCTGAAATCG	240
TGTCAGAAAT GAAGCTTCCA TTGCTAGTGC GTTCTGACAA GTTCAAGTCT TGCAATCGGC	300
TTTCATAGAT TGTTCCTTTA TTGGATTGGA CAAGCAGAGT TTGGTCGTTT ACATCCACTT	360
CCGTAAGTAA GAAATCGCCA ACAAATCCTT GCTCTGCAAC TGCTCCTGCC AAGAAGACAC	420
GATGCGGTTT GTTTTCAAC TCACGCAAGA CTTGTAATCC TCGTTTGGA CGGCTGGTTG	480
CTAGAATTTT CTCAATGGAA ACACGTTTCA AGCTTCCACG CTGGGTCAAG AGGTAGAAGG	540
ACGAAGTATT ACAGATAAAG CCAGATTGGA GGACATCATC TTCTTTCAA TTCATAGCCT	600
TGACACCTGC TGCCTTAGCA CCGACAACCG GAACCTCTTC GATATTGAAA CGCAGGGCAT	660
AACCATTTTG ACTAACCAAG ACAACATCAT CTAGTTAAT CGGAGCCACT GCTACAATCT	720
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GAGTGAATTC TTTTCGCTCT ACCCGTTTGA TTTGACCAAG GCGAGTCACT GCAAAGTAGG	840
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AGTTTGTGAT GGTTTGGCTC AGATGCTCTC CGATGTCCTT CCAACGAATA TCTGCCAACT	960
CATGGATTGG TCTGTAGATG ACATTTCCTA GACTTGTGAA CATCAAGAGG TGCTGGGTTG	1020
TCTTGGCAGA TTGAACAAAA ATCAAACGGT CATCATCAGC CTGCCAATT TCTTCCAAGG	1080
TGGAAGCCCG AAAGGAACGT GGACTGGTAC GCTTGATGTA ACCTGCCTTG GTCACGCTGA	1140

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CGTAGGTATC TTCTCAGCG ATAAGACTAG CTGTATCAAT CTCAATTGCT TTCGCAGTGT	1200
CTTCTAAAGA ACTCAAACGA GGAGTTGCAA ATTTCTTCTT GACCTCACGA AGTTCTTTCT	1260
TCATGAGATT GTACATAGTC CTTTCATCAC CGATAATAGC CGCCAGCATA GCAATCTTCT	1320
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GTTGCAAAGT TACGATAGCC TCAGCCTGTT CTTCCTGAAA ATCATAGCTA ACTTTGAGGT	1440
TTTCTTTGGC GTCCGCCTTA TTCTCAGAAG CACGGATAAG AGCAATGACT TCATCCAAAA	1500
TCGAAATCAC ACGAATCAAA CCTTCGACGA TATGGAGACG TTTCTCAGCC TTTTCTTTGT	1560
CAAAGCGTGA ACGCGCCAAA ATCACTTCTC GACGGTGAGC GATATAGCTA GACAGGATTG	1620
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TGATTGTAG GTCCGTGTAC TTAAATAAGT AGTTGAGAAC AAGCTCAGTA TTAGCGTCTT	1740
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TTTCAGTCTT GGAACGAACA ACCACGCGCC CTTTCCCAGT CTCATAAGCT TTCTTGATTT	1980
CATCAGGACC CTGAATAATA GCCCCTGTAG GGAAGTCTGG TCCAGGCAAG AATTCCATGA	2040
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CCAAGAGGTT TGGAAGGCT GCTGGCAAGA CCGTTGGTTC TTTCTCCGTA TCGTCAAAGT	2220
TCCATGCAAA AGGAACGTG TTTTCTCGA TATCCTGAAG AAGGTAGCCT GCAATTCAG	2280
ACAACGTGC CTCAGTATAA CGCATAGCCG CAGGAGGATC TCCGTCCATA GAACCGTTAT	2340
TACCGTGCAT TTCAACTAGA ATCTCACGAT TTTTCCAGTT CTGTGACATA CGAACCATGG	2400
CATCATAGAT AGAAGAATCC CCGTGTGGGT GGAAATTCCC CATGATGTTT CCGACTGACT	2460
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TACGGCGCTG AACCGGCTTC AACCCATCAC GAATATCTGG CAAAGCCCGG TCTTGAATAA	2580
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TGTTAGACAT AAGATACAAA GCCCATAAAA TACCAAGTGA AAATAGAAAA TTCTTGAAGT	2700
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TGTTCAAGTA CGATAAGTAA CCAAATATC CTGTTGTAT TTTTCAATAT GAAAATCTGG	2880
TTTTCCAAAA TTAGTCTTAG TTTGTGTCTT AGCCGCTCCC TTAAGCGCCT CTTTGAGATA	2940

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AGCACTCATA GCAGATTCTT CATTAATAAT CCTGCAATTT TTTCAAACCA AGATTTTCAA	3000
ACTGCTTTTT CACATAGTCA TTCACATCCG ACTCTAATTT CCAGTTTACT AACATATTAT	3060
TTTCTTTTCAT TAAAACTG TCGTTTCTTC TAGCGTAAAC TTGACATTAT CTTCAATCCA	3120
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TAAATCTTCA ATTGTGACAC GGATGAGGGT ACGTGTTTCT GGGTTCATGG TTGTTTCCCA	3240
GAGCTGGTCC GCATTCATCT CACCAAGTCC TTTGTATCGT TGGAGGGTAG CGCCTTTACC	3300
GAAGTGTTTA CGGAGTTCTT CTAGTTCTCC GTCCGTCCAA GCGTAGGCCA CTTCTTCTTT	3360
CTTGCCTTTA CCTTTGGACA TCTTGTAAG AGGTGGGAGG GCAATATAGA CATGACCTGC	3420
CTCGACTAGC GGACGCATGT AACGGTAGAA AAATGTCAAG AGCAAGGTCT GGATATGGGC	3480
ACCGTCGGTA TCCGCATCGG TCATGATAAT GATCTTATCA TAGTTGGCAT CTTCAATAGA	3540
GAACTCTGCT CCAACACCCG CACCAATGGT ATAAATCATG GTATTGATCT CTTCAATTTT	3600
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AGCCTGGAAC TTGCGGTCAC GACCTTGTTT GGCAGAACCA CCGGCAGAGT CCCCCCAAC	3720
TAGATAGAGT TCATTCTTAG CAGGATTCTT AGATTGGGCT GGGGTCAATT TCCCAGACAA	3780
CAAGCCCTTA TCTTCTTGT TTTTCTTCCC ATTTGCGCTC TCATCACGCG CCTTACGTGC	3840
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ATTTTCCATA AGGAAAAGG TCAACTTATC AGCCACTATT CCATCCACAA CTGGGCGAGC	3960
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TAAGATAGAA AGAACGGCCG CTAGTCCCTC ACGATAGTCT GAACCTTCAA GGTTTTATC	4080
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CTTGAGTCCT GTCTCGTGCG TTCCACCGTC CTTGGTGCGA ACGTTATTGA CAAAAGATAG	4200
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AAAATCTTGT ACTCCATTCT CATAGTGGAA CTCAATCGCT TCATTTGTTC GCTTGTCGGT	4380
TAAAGACAAG GTCACATTTT TCAAGAGAAA GGCTGATTCA TTAAGGCGCT CTGAAATGGT	4440
ATTGTAATTG AAATCTGTCT TAGAAAATAT AGTCGCGTCA GGCATAAAAG TAACTTTGGT	4500
GCCTGTTTTA GACTTGGGTG CTGTACCGAT TTTCTTCAA GTGCTGACAG GTTTTCCACC	4560
ATTTTCGAAA CGTTGCTTGT AAATGCGCC ATCACGGGTA ATTTCAACTT CTAACCAGCT	4620
AGAAAGGGCG TTAACAACGG AAGAACCCAC TCCGTGAAGT CCACCTGATG TCTTATAGCC	4680

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ACCTTGACCG AATTTCCCTC CGGCATGAAG AATGGTAAAG ATAACCTCAA CAGTTGGAAT	4740
TCCCATAGCG TGCATACcTG TCGGCATCCC ACGTCCATGG TCTTGAACCG TTAGACTACC	4800
GTCTTTATTG ATAGTTACAT CAATACGATC ACCAAACCCA GACAAGGCTT CATCGACTGC	4860
ATTATCAACG ATTTCCCAAA CTAGGTGATG AAGACCAGCG CCATCGGTCG ATCCAATATA	4920
CATCCCTGGA CGTTTTTCGGA CCGCATCCAA CCCTTCTAGC ACCTGAATAG CATCATCAT	4980
ATAATGTGTA ATATTGATTT CCTTTTTTGA CACAAGGAAC CTCCTATTTCG TTCATCTTTA	5040
CTATTCTACA GGTTTTCCAA GGATTTTGCA AAATTTTCTT TTCTCCGATG TGACAATTTT	5100
AGCAGAGATT CTCTGCTTTT CTTTCCCAAT TCATGATATA ATAGGAGTAT GATTACAATA	5160
GTTTTATTAA TCCTAGCCTA TCTGCTGGT TCGATTCCAT CTGGTCTCTG GATTGGACAA	5220
GTATTCTTTC AAATCAATCT ACGCGAGCAT GGTTCGGTA AACTGGAAC GACCAACACC	5280
TTCCGCATTT TAGGTAAGAA AGCTGGTATG GCAACCTTTG TGATTGACTT TTTCAAAGGA	5340
ACCCTAGCAA CGCTGCTTCC GATTATTTTT CATCTACAAG GCGTTTCTCC TCTCATCTTT	5400
GGACTTTTGG CTGTTATCGG CCATACCTTC CCTATCTTTG CAGGATTTAA AGGTGGTAAG	5460
GCTGTCGCAA CCAGTGCTGG AGTGATTTTC GGATTGCGC CTATCTTCTG TCTCTACCTT	5520
GCGATTATCT TCTTTGGAGC TCTCTATCTT GGCAGTATGA TTCTACTGTC TAGTGTCACA	5580
GCATCGATTG CGGCTGTTAT CGGGGTCTCG CTCTTTCCAC TTTTGGTTT TATCCTGAGT	5640
AACTATGACT CTCTCTTCAT CGCTATTATC TTAGCACTTG CTAGTTTGAT TATCATTCGT	5700
CATAAGGACA ATATAGCTCG TATCAAAAAT AAAACTGAAA ATTTGGTCCC TTGGGGATTG	5760
AACCTAACCC ATCAAGATCC TAAAAAATAA AATGCCAGTT CTGTACTGCC CCCAAACAGT	5820
TAGACAAATA ATTTATCCAA AGGATTTAGT TCTGTACTGC ACAGGACTAA GTCCTTTTAG	5880
TTTACCTTA ATTCGTTTGT TGTGTAGTA ATCAATATAG TCTATAATGG CTTGTTCCAA	5940
TTGATTAAGT GATTTAAATG TTTTCTCATA GCCATAAAC ATTTCCGATT TTAAATGCC	6000
AAAGAAAGAT TCCATCCTAC CGTTGTCTTG GCTGTTGCCC TTACGTGACA TGGATGCTTG	6060
AATTCCCTTA CTCTCTAGGA ACCGATGATA AGAATCGTGT TGGTATTGCC AGCCTTGGTC	6120
ACTATGGAGA ATCGTATTCT CGTAGTGCTT CTCTGTGAAT GCCTGTTCCA A	6171

(2) INFORMATION FOR SEQ ID NO: 38:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 18475 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 38:

TATTACAAAT AAAAAACGG AGGAGTGCTT TATGAAAGCC TATACTTATG TTAAACCAGG	60
ACTTGCTTCT TTTGTTGATG TAGACAAACC AGTTATTCGC AAGCCAACAG ACGCTATTGT	120
GCGTATTGTA AAAACCACTA TTTGTGGAAC AGACCTCCAT ATTATCAAAG GGGATGTTCC	180
TACTTGCCAA AGTGGTACCA TTCTTGGCCA CGAAGGGATT GGGATTGTTG AAGAAGTTGG	240
GGAAGGAGTT TCCAACCTCA AAAAAGGTGA CAAGGTCTTG ATTTCTTGCG TCTGTGCCTG	300
TGGTAAATGC TACTACTGTA AAAAAGGAAT TTATGCTCAC TGTGAAGACG AAGGGGGCTG	360
GATTTTCGGT CACTTGATTG ATGGTATGCA GGCTGAATAT CTACGTGTCC CTCATGCAGA	420
TAATACTCTT TACCATACTC CAGAAGACTT GTCAGATGAA GCTTTGGTTA TGCTGTCAGA	480
CATTCTGCCT ACTGGATATG AAATTGGTGT CTTAAAAGGG AAAGTAGAAC CTGGTTGCAG	540
CGTAGCCATT ATTGGTTCAG GTCCAGTTGG ATTGGCTGCT CTTTAAACAG CCCAATTCTA	600
TTCAACAGCT AAATTGATTA TGGTAGACCT AGACCATAAC CGCTTGAAA CTGCCCTATC	660
ATTCGGTGCG ACTCATAAGG TTAATCTTTC AGACCCTGAA AAAGCCATTA AAGAAATTTA	720
TGATTTGACA GATGGTCGTG GTGTGGATGT CGCTATCGAA GCTGTTGGTA TTCCTGCAAC	780
ATTTGATTTT TGTCAAAAGA TTATCGGTGT AGACGGAACG GTTGCCAACT GTGGTGTGCA	840
TGGTAAACCA GTTGAATTCG ATTTAGATAA ACTTTGGATT CGCAACATCA ATGTAACAAC	900
TGGTTTGGTA TCTACAAATA CGACTCCACA ATTGTTGAAA GCACTTGAAA GTCATAAGAT	960
TGAACCGGAA AAATTGGTAA CTCACTATTT CAAACTCAGT GAAATTGAAA AAGCCTACGA	1020
AGTCTTCAGT AAGGCAGCAG ACCACCATGC CATTAAGGTC ATTATCGAAA ACGATATCTC	1080
AGAAGCCTAA GTAGTAAAAA TATTTTGTGTA CATAAGTAAA TAGAAATTCG GTCATCCATC	1140
AGATGGCTGG ATTTTATATC AAAAAATTAA GAAATGAGCA TATTTCTTTC CTTGTCTGGC	1200
GGAATTGGTT ATAATATACG GTACAAAGGA ATGAATGAAT ATGTATCGTG TTATAGAAAT	1260
GTACGGAGAT TTTGAACCGT GGTGTTCTT AGAAGGTTGG GAAGAAGATA TTGTAGCAAG	1320
TAGAAAATTT GACCAGTATT ATGATGCTCT CAAATACTAC AAAACTTGCT GGTTTAGATT	1380
GGAACAAGAA TCGCCTCTTT ATAAAAGTAG AAGCGACTTG ATGACCATTT TTTGGGACCC	1440
GGAAGACCAA CGCTGGTGTG ATGAATGTGA TGAGTATTTA CAACAATACC ATTCTTTGGC	1500
TCTTTTGCAG GATGAGCAGG TTATCCCAGA CGAAAACTA CGCTCAGGCT ATGAAAAACA	1560
AACCAGTCAG GAAAGGAATC GTTCTTGCCG TATGAAATTA AAATAGAGAA AAGTAACTTT	1620
TTTGGAGTTG CTTTTTTTAT TTTCTAACT CTTTGCGAAT AGTATAGGTG AGGAGGTAAG	1680

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TATGGTTCAA	GAAATTGCAC	AAGAAATCAT	TCGTTTCAGCT	CGGAAAAAAG	GGACGCAGGA 1740
TATCTATTTT	GTCCCTAAGT	TAGACGCCTA	TGAGCTTCAT	ATGAGGGTAG	GAGACGAGCG 1800
CTGTAAAATT	GGTAGCTATG	ATTTTGAAAA	GTTTGCAGCC	GTTATCAGTC	ACTTTAAGTT 1860
TGTGGCGGGT	ATGAATGTGG	GAGAAAAAAG	ACGTAGTCAA	CTGGGTTCCCT	GTGATTATGC 1920
CTATGACCAT	AAGATAGCGT	CTCTACGTTT	ATCTACTGTA	GGCGATTATC	GGGGGCATGA 1980
GAGTTTGGET	ATCCGTTTGT	TGCACGATGA	GGAGCAGGAC	CTGCATTTTT	GGTTTCAGGA 2040
TATTGAAGAA	TTAGGCAAGC	AGTACAGGCA	ACGGGGACTC	TATCTTTTTG	CTGGTCCGGT 2100
TGGGAGTGGT	AAGACGACCT	TGATGCATGA	ATTGTCCAAG	TCACTCTTTA	AAGGACAGCA 2160
AGTTATGTCC	ATCGAAGATC	CTGTCGAAAT	CAAGCAGGAC	GACATGCTTC	AGTTGCAGTT 2220
GAACGAAGCA	ATCGGCCTAA	CCTATGAAAA	TCTAATCAAA	CTTTCCTTGC	GTCATCGACC 2280
AGATCTCTTG	ATTATCGGAG	AAATTCGTGA	CAGCGAGACG	GCGCGTGCAG	TGGTCAGAGC 2340
TAGTTTGACA	GGTGCACAG	TCTTTTCAAC	CATTACGCC	AAGAGTATCC	GAGGTGTTTA 2400
TGAGCGTCTG	CTGGAGTTGG	GTGTGAGTGA	AGAAGAATTG	GCAGTTGTTC	TGCAAGGAGT 2460
CTGCTACCAG	AGATTAATCG	GGGGAGGAGG	AATCGTTGAC	TTTGCAAGCA	GAGATTATCA 2520
AGAACACCAA	GCAGCCAAGT	GGAATGAGCA	AATTGACCAG	CTTCTTAAAG	ATGGACATAT 2580
CACAAGTCTT	CAGGCTGAGA	CGGAAAAAAT	TAGCTACAGC	TAAGCAAAAA	AATATCATCA 2640
CCCTATTTAA	CAATCTCTTT	TCTAGCGGTT	TTCATCTGGT	GGAGACTATC	TCCTTTT TAG 2700
ATAGGAGTGC	TTTGTTGGAC	AAGCAGTGTG	TGACCCAGAT	GCGTGTGGGC	TTGTCTCAGG 2760
GGAAATCATT	CTCAGAAATG	ATGGAAAGTT	TGGGATGTTC	AAGTGCTATT	GTCACCTCAGT 2820
TATCCCTAGC	TGAAGTTCAT	GGCAATCTCC	ACCTGAGTTT	GGGAAAGATA	GAAGAATATC 2880
TGGACAATCT	GGCTAAGGTC	AAGAAAAAAT	TGATTGAAGT	AGCGACCTAT	CCCTTGATTT 2940
TGCTGGGTTT	TCTTCTCTTA	ATTATGCTGG	GGCTACGGAA	TTACCTGCTC	CCACAACCTGG 3000
ATAGTAGCAA	TATTGCCACC	CAAATTATCG	GTAATCTGCC	CCAAATTTTT	CTAGGCATGG 3060
TAGGGCTTGT	TTCCGTGCTT	GCCCTTTTAG	CACTCACTTT	TTATAAAAGA	AGTTCTAAGA 3120
TGAGTGTCTT	TTCTATCTTA	GCACGCCTTC	CCTTTATTGG	AATCTTTGTG	CAGACCTACT 3180
TGACAGCCTA	TTATGCACGT	GAATGGGGGA	ATATGATTTC	ACAGGGAATG	GAGTTGACGC 3240
AGATTTTTC	AATGATGCAG	GAACAAGGTT	CCCAGCTCTT	TAAAGAAGTC	GGTCAAGATC 3300
TGGCTCAAAC	CCTGAAAAAT	GGCCGTGAAT	TTTCTCAGAC	GATAGGAACC	TATCCTTTCT 3360
TTAGGAAGGA	ATTGAGTCTC	ATCATAGAGT	ATGGGGAAGT	TAAGTCCAAG	CTGGGTAGTG 3420
AGTTGGAAAT	CTATGCTGAA	AAAAC TTGGG	AAGCCTTTTT	TACCCGAGTC	AACCGCACCA 3480

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TGAATTTGGT GCAGCCACTG GTTTTTATCT TTGTGGCACT GATTATCGTT TTACTTTATG	3540
CGGCAATGCT CATGCCCATG TATCAAAATA TGGAGGTAAA TTTTAAAAAT GAAAAAATG	3600
ATGACATTCT TGAAAAAGC TAAGGTTAAA GCTTTTACAT TGGTGGAGAT GTTGGTGGTC	3660
TTGCTGATTA TCAGCGTGCT TTTCTTGCTC TTTGTACCTA ATCTGACCAA GCAAAAAGAA	3720
GCAGTCAATG ACAAAGGAAA AGCAGCTGTT GTTAAGGTGG TGGAAAGCCA GGCAGAACTT	3780
TATAGCTTAG AAAAGAATGA AGATGCTAGC CTAAGAAAGT TACAAGCAGA TGGACGCATC	3840
ACGGAAGAAC AGGCTAAAGC TTATAAAGAA TACAATGATA AAAATGGAGG AGCAAATCGT	3900
AAAGTCAATG ATTAAGGCCT TTACCATGCT GGAAAGTCTC TTGGTTTTGG GACTTGTGAG	3960
TATCCTTGCC TTGGGCTTGT CCGGCTCTGT CCAGTCCACT TTTTCAGCGG TAGAGGAACA	4020
GATTTTCTTT ATGGAGTTTG AAGAACTCTA TCGGGAACC CAAAAACGCA GTGTAGCCAG	4080
TCAGCAAAAG ACTAGTCTGA ACTTAGATGG GCAGACGCTT AGCAATGGCA GTCAAAAGTT	4140
GCCAGTCCCT AAAGGAATTC AGGCCCCATC AGGCCAAAGT ATTACATTTG ACCGAGCTGG	4200
GGGCAATTCG TCCCTGGCTA AGGTTGAATT TCAGACCAGT AAAGGAGCGA TTCGCTATCA	4260
ATTATATCTA GGAAATGGAA AAATTAAACG CATTAAGGAA ACAAAAAATT AGGGCAGTGA	4320
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GACAAATTCA AAAAAATAGG CAAGAGGAAG CAAAAATCTT GCAAAAGGAA GAAGTCTTGA	4440
GGGTAGCTAA GATGGCCCTG CAGACGGGGC AAAATCAGGT AAGCATCAAC GGAGTTGAGA	4500
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CAATCAAAGA GCCATAAGGT CAAGGCTTTT ACCTTGTTAG AATCCCTGCT TGCCCTCATT	4620
GTCATCAGTG GGGGATTACT CCTTTTCAA GCTATGAGTC AGCTCCTCAT TTCAGAAGTT	4680
CGCTACCAGC AACAAAGCGA GCAAAAGGAG TGGCTCTGTG TTGTGGACCA ACTTGAGGTA	4740
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CAACTGGTTC GCTTTCATTT CCAGTTCCAA AAAGGCTTAG AAAGGGAGTT CATCTATCGT	4980
GTGGAAAAAG AAAAAAGTTA AGGCAGGTGT TCTCCTCTAC GCAGTCACCA TAGCAGCCAT	5040
CTTTAGTCTT TTGTTGCAAT TTTATTTGAA CCGACAAGTC GCCCACTATC AAGACTATGC	5100
TTTGAATAAA GAAAAATTGG TTGCTTTTGC TATGGCTAAA CGAACCAAAG ATAAGGTTGA	5160
GCAAGAAAGT GGGGAACAGT TTTTAAATCT AGGTCAGGTA AGCTATCAAA ACAAGAAAAC	5220

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TGGCTTAGTG ACGAGGGTTC GTACGGATAA GAGCCAATAT GAGTTTCTGT TTCCTTCAGT	5280
CAAAATCAAA GAAGAGAAAA GAGATAAAAA GGAAGAGGTA GCGACCGATT CAAGCGAAAA	5340
AGTGGAGAAG AAAAAATCAG AAGAGAAGCC TGAAAAGAAA GAGAATTCAT AGTCAATTCA	5400
ACTATAATGC GTTGAATCCA GAATAGTCCA CTGTAGTTTC TAGAAAATTG CTGGAAATGG	5460
ATGTTAAGCT CCAATTCATT TGTATTATATC TTATTTTCAGT TTAATACTACT TTGTGCTAAA	5520
TTAAAGATAT GAAACATGAT TTAAACCACA AAGCAGAAAC TTTCGATTCC CCTAAAAATA	5580
TCTTCCTCGC AAACCTGGTA TGTCAAGCAG CCGAGAAACA GATTGATCTT CTATCAGACA	5640
AAGAAATTTT AGATTTCGGT GGTGGCACGG GTCTATTAGC CTTGCCCTTA ACCCCTAGCC	5700
AAGCAGGCTA AGTCAGTCAC TCTTGTAGAC ATTTCTGAGA AAATGTTGGA GCAAGCTCGT	5760
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AATCCCTTGG AGAAAGAGTT TGATTGCCTT GCTGTTAGTC GGGTTCCTCA TCATATGCCT	5880
GATTTGGATG CGGCTCTCTC ACTGTTTCAT CAACATTGA AGGAAGATGG GAAACTCATC	5940
ATTGCTGATT TTACCAAGAC AGAAGCTAAT CATCATGGAT TTGATTAGC TGAAGTGGA	6000
AACAAGCTAA TTGAGCATGG TTTTTCATCT GTGCATAGTC AGATTCTCTA TAGTGCTGAA	6060
GACCTGTTTC AAGGAAATCA CTCAGAATTC TTTTAAATAG TAGCCCAAAA ATCACTCGCC	6120
TAGTCAGGGA GTGATTTTTT TATAAGGATG GAAAAAAGAA GGGAAATTTG GTAAGATAGG	6180
AATATGGATT TTGAAAAAT TGAACAAGCT TATACCTATT TACTAGAGAA TGTCCAAGTC	6240
ATCCAAAGTG ATTTGGCGAC CAACCTTTAT GACGCCTTGG TGGAGCAAAA TAGCATCTAT	6300
CTGGATGGTG AAAGTGAAGT AAACCAGGTC AAGGAGAACA ATCAAACCCT TAAGCGTTTA	6360
GCACTACGCA AAGAAGAATG GCTCAAGACC TACCAGTTTC TCTTGATGAA GGCTGGGCAA	6420
ACAGAACCCT TGCAGGCCAA TCACCAGTTT ACACCGGATG CTATTGCTTT GCTTTTGGTG	6480
TTTATTGTGG AAGAGTTGTT TAAAGAGGAG GAAATTACTA TCCTCGAAAT GGGTTCCTGG	6540
ATGGGAATTC TAGGCGCTAT TTTCTTGACC TCGCTTACTA AAAAGGTGGA TTACTTGGGA	6600
ATGGAAGTGG ATGATTTGCT GATTGATCTG GCAGCTAGCA TGGCAGATGT AATTGGTTTG	6660
CAGGCTGGCT TTGTCCAAGG AGATGCCGTT CGCCACAAA TGCTCAAAGA AAGCGATGTG	6720
GTCATCAGTG ACTTGCCTGT CGGCTATTAT CCTGATGATG CCGTTGCGTC GCGCCATCAA	6780
GTTGCTTCTA GCCAAGAACA TACTTACGCC CATCACTTGC TCATGGAACA AGGGCTTAAG	6840
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CAAAGTGATT TGTTAAAAGA ATGGCTGAAA GAAGAGGCGA GTCTGGTTGC TATGATTAGT	6960
CTGCCTGAAA ATCTCTTTGC TAATGCCAAA CAATCTAAGA CTATTTTAT CTTACAGAAG	7020

AAAAATGAAA TAGCAGTAGA GCCTTTTGTT TATCCACTTG CTAGCTTGCA AGATGCAAGT	7080
GTTTAAATGA AATTTAAAGA AAATTTTCAA AAATGGACTC AAGGTACTGA AATATAAAAT	7140
AGATTTTGTT ATAATAGTTG AAAACGCTTA AAAAGGGGTA TCATGTTATG ACAAAAACAA	7200
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AAGTATTGGC GAAAGGTTTG ATTGAACGTA TCGGTTTGAA AGATTCAATT TCAACTGTAA	7320
AATTTGACGG CCGTTCTGAA CAACAAATTT TGGATATTGA AAATCATATA CAAGCCGTTA	7380
AAATTTTATT GGATGACTTG ATTCGTTTCG ATATTATCAA GGCTTATGAC GAGATTACAG	7440
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GAGATGTTTT AGAAAAAGTT GAAGAGTTGA GTTGTGTTGC TCCTCTACAC AACCCGGCCA	7560
ATGCAGCAGG TGTTCGTGCC TTCAAGGAAT TGTGGCCAGA CATTACCAGT GTAGTTGTTT	7620
TTGATACTTC CTTCCACACA AGTATGCCAG AGAAAAGCTTA TCGCTACCCT CTACCAACAA	7680
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GTCATATTGG TAACGGAGGC TCAATTACAG CTGTGAAAGC CGGCAAATCT GTAGACACTT	7860
CTATGGGGTT CACTCCTCTT GGTGTTATTA TGATGGGAAC GCGTACAGGG GATATTGATC	7920
CAGCTATCAT TCCTTATTTA ATGCAATATA CAGAGGATTT TAACACACCA GAAGATATCA	7980
GTCGTGTTCT TAACCGTGAA TCAGGTCTTT TGGGAGTTTC TGCTAATTCT AGCGATATGC	8040
GCGATATAGA AGCAGCTGTA GCAGAAGGGA ATCAGCAGGC TAGCTTGGCT TATGAAATGT	8100
ATGTTGACCG TATCCAAAA CATATCGGTC AGTACCTTGC AGTGCTAAAT GGAGCAGATG	8160
CCATTGTTTT CACAGCAGGT GTCGGTGAAG ATGCAGAGAG TTTCCGTCGT GATGTAATCT	8220
CAGGGATTTC GTGGTTTGGT TGTGATGTTG ATGATGAAAA GAATGTCTTT GCGTTACAG	8280
GAGACATCTC AACAGAGGCA GCTAAAATCC GTGTCTTGGT TATTCCAACA GATGAAGAAT	8340
TAGTCATTGC CCGTGACGTT GAACGCTTGA AAAAATAAGT GAAACTAAAA AAATATTCAA	8400
TACAAGGAGT TGGGAAAGTT ATTTTCCAG CTCTTTTTC TGATGAAATT GTCCAAAACC	8460
TTGCTATGAT TGGCTTTTTT GAAAAATATG GTATAATAGT AGTAATTTAA TAGATGGAGT	8520
TGAGTTTGA AGAAAACTT TCGTGTAAGA AGAGAGAAAG ATTTTAAGGC GATTTTCAAG	8580
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CGTTTTCGAG TAGGTCTATC AGTTAGCAAA AACTGGGGA ATGCCGTCAC TAGAAATCAA	8700
ATTAAGCGAC GGATTCGGCA TATTATCCAG AATGCAAAAG GGAGTCTGGT AGAAGATGTC	8760

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GACTTTGTTG TCATTGCTCG AAAAGGAGTC GAAACCTTGG GATACGCAGA GATGGAGAAA	8820
AATCTACTCC ATGTATTAAA ATTATCAAAG ATTTACCGGG AAGGAAATGG GAGTGAAAAA	8880
GAAACTAAAG TTGACTAGTT TGCTAGGACT GTCTCTGTTA ATCATGACAG CCTGTGCGAC	8940
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TCTCTTTACG GTCTTGATTC GTACAGTCCT CTTGCCAGTC TTTCAGGTGC AAATGGTGGC	9120
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GGGTGTCAGA CAGTCAGACT CTCTTTGGCC GATTTTGATT CAGATGCCGG TTATTTTGGC	9300
CCTGTTCCAA GCCCTATCAA GAGTTGACTT TTTAAAGACA GGTCATTTCT TATGGATTAA	9360
CCTTGGTAGT GTGGATACAA CCCTTGTTCT TCCGATTTTA GCAGCAGTAT TCACCTTTT	9420
AAGTACTTGG TTGTCCAACA AAGCTTTGTC TGAGCGAAAT GCGCTACGA CTGCGATGAT	9480
GTATGGGATT CCAGTCTGA TTTTATCTT TGCAGTTTAT GCGCCAGGTG GAGTCGCCCT	9540
ATACTGGACA GTGTCTAATG CTTATCAAGT CTTGCAAACC TATTTCTTGA ATAATCCATT	9600
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TCCAAGAATG AAGGCTCATA TCAAAGTCAT TTCTAGGGAG AAAAAAGGCT TTCTTGGTCT	9840
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GAAGACGGTT AGTGAAGAAA CCGTTGACCT TGGTCATGTG GTTGATGCTA TTAATAAAT	10020
AGAGGAAGAA GGTCAAGGTA TTTCTGATGA AGTCAAGGCT GAAATCTTAA AACATGAAAG	10080
ACATGCCAGC ACTATCTTAG AAGAACTGG TCACATTGAG ATTTTAAATG AACTTCAAAT	10140
CGAGGAAGCG ATGAGGGAAG AAGCAGGCGC TGATGACCTT GAAACTGAGC AAGACCAAGC	10200
TGAAAGTCAA GAACTAGAAG ACTTGGGCTT GAAAGTTGAA ACGAACTTTG ATATTGAACA	10260
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TACACTTTCA AATGATTATA ACCGTCGTAG CATCAATCTA CAAATTGACA CCAACGAACC	10380
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CGAACACCGT GCAGAAGTCT TGCAGACCTA TGCGCAAAAA TTGGCGACTC GTGTTTGGTA	10560

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TATTATTTCA CGTATGGATG GCGTGACTAG TTA CTCTGAA GGTGATGAGC CAAATCGCTA	10680
TGTTGTTGTA GATACAGAAT AAGTAAAATC AGGTTTATCC TGATTTTTTG CTAGTTAGAG	10740
GAGGTAAAC TGATGTTGAA TAAGATAAGA GACTATTTAG ACTTTGCTGG TTTGCAGTAC	10800
CGTAATCCTG ATAAAGCGGG AGCAGAGCGA GAGAAGATGC TGGCATTCCG CCACAAAGGA	10860
CAAGAGGCCC GAAAGGTTTT TACAGAACTG GCCAAAGCCT TTCAAGCAAG CCATCCAGAA	10920
TGGCAACTCC AACAGACTAG CCAGTGGATG AATCAGGCCC AGCGTTTGAG ACCACATTTT	10980
TGGGTTTATC TACAGAGAGA CGGACAAGTG ACAGAACCTA TGATGGCCTT ACGTTTGTAT	11040
GGGACATCTA CTGACTTTGG AATTCTTTG GAAGTCAGTT TCATCGAACG TAAGAAGGAT	11100
GAGCAAACAC TGGGCAAGCA GGCCAAAGTT TTAGACATTC CAACCGTTAA AGGGATTTAT	11160
TATCTAACCT ACTCTAATGG TCAAAGTCAA CGGTGGGAGG CGAATGAAGA AAAGCGTCGT	11220
ACTTTACGCG AGAAGGTGAG AAGTCAAGAA GTTCGAAAAG TTTTAGTGAA GGTAGATGTT	11280
CCTATGACAG AAAATTCGTC TGAAGAAGAA ATCCTAGAAG GCTTATTGAA GTCTTATTCT	11340
AAAATCTTTC CCTATTATCT AGCTACGAGA AAATAAGATA ATTTGTAAAA CATCATAAAT	11400
CATACAGTCC AAGAGTGAAC AGTCCGCTGT GTAATTCTTG GTCTTTTTGT TTGCGCTTTC	11460
GCATTATATA ATAACTTAC AAAACAATT CAAAAGGAGA ACAATTATGG AAGTCGTTTC	11520
AAGTGTTCTA AATTGGTTTT CTAGCAATAT TTTGCAGAAT CCCGCATTTT TCGTAGGTTT	11580
ATTGGTGTG ATAGGATATG CACTTTTGAA AAAACCTGCC CATGACGTTT TTTCAGGGTT	11640
TGTTAAAGCA ACAGTAGGGT ATATGTTGCT TAACGTGGGT GCTGGTGGTT TGGTTACAAC	11700
CTTTCGTCCA ATCTTAGCAG CTCTTAACTA CAAATTCCAA ATTGGTGCAG CGGTTATCGA	11760
CCCTTACTTT GGACTTGCTG CAGCAAACAA CAAAATTGTA GCAGAGTTTC CAGATTTTGT	11820
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TCGAAAGATT ACGAAGGTAA GAACCTCTT TATTACTGGT CACATCATGG TACAACAAGC	11940
TGCAACAGTA TCTCTTATGG TTCTATTCTT AGTACCACAA TTGCGCAATG CTTACGGTAC	12000
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GGCAACTCAA CGCTTGACTG GTGGTGGCGG ATTTGCGATT GGTCACCAAC AGCAATTTGC	12120
AATCTGGTTT GTAGATAAAG TAGCAGGACG CTTTGGTAAG AAAGAAGAAA GTTTAGACAA	12180
TCTTAAATTA CCTAAGTTCC TCTCAATCTT CCACGATACA GTTGTTGCAT CTGCTACCTT	12240
GATGCTCGTA TTCTTCGGAG CCATTCTTTT AATCTTGGGT CCAGACATTA TGTCTAATAA	12300

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TGTCCTTCAA GTTGCTCTAG GAGCTCTTTG TGTGGCCCTT CTCGATTTGG CATCTTATGG	12780
TGGCTACCAT GGAAATATCG ACTTTGAATT CCCATGGCTT GGATTTGGAT ATATCTTCAA	12840
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(2) INFORMATION FOR SEQ ID NO: 39:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 7186 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 39:

CCAGGATTTG GTACCGTTGC AAGTGGTGTG CCTTTCCTCC TAAAGGAAAA TGGAGGAAAA 60
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 GAAAAAATC GCTTGCTTGC AGCAGGGAAT GACTTTAACT TTGTAACCAA TGTGGATGAT 180
 ATTTTATCAG ACCAGGATAT TACTATCGTA GTGGAATTGA TGGGGCGTAT TGAGCCTGCT 240
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 GCTTCTGATA AAATTACGCG CGTGCTTGGA GTAGTCAACG GAACTTCCAA CTTTCATGGT 480
 ACCAAGATGG TGGAAGAAGG CTGGTCTTAC GATGATGCTC TTGCGGAAGC ACAACGTCTA 540

386

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CAGTAACCAT ACTACGGTAA GGTGACGCTG ACGTGGTTTG AAGAGATTTT CGAAGAGTAT	2400
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(2) INFORMATION FOR SEQ ID NO: 40:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14273 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40:

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CTGAAAATTC TAAAAAATTT ATAAGTAAGG AATTAATTAG TTATTTTGT GATAAAGTTT 60

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390

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TGGGACATAT ATTTTATTTT GAGTCTAAAA AAACATATGA GGTAGGATTG CGTAAAGCAA	360
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AAAATATTGT CCTTGAAGAG GGACATTAAA AACTACTGAG AATATTAATG AGGGGAAAAA	480
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GATAATACAA TGATTAAATA AAAAATACAA CAAGTTGTTT TGGAAATCATT ACAGAATTTT	720
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GTTAATGGTC CCGCATTTTC TTATGAACT TTATATAATC TGATTAAAA ACAATATAAA	1020
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CTTTTAACGA ATGGGGCAAA AAGATGGGAT TGGTCCCAGA TCCTTGAGAC GTT

14273

(2) INFORMATION FOR SEQ ID NO: 41:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9828 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 41:

GTGAAGTCCG GCAAAAGGTG CAAGTGATGA GCTCAGGTTT TTTAGCTCTT GACATTGCCC	60
TTGGCTCAGG TGGTTATCCT AAGGGACGTA TCATCGAAAT CTATGGCCCA GAGTCATCTG	120
GTAAGACAAC GGTGCCCCTT CATGCAGTTG CACAAGCGCA AAAAGAAGGT GGGATTGCTG	180
CCTTTATCGA TCGGGAACAT GCCCTTGATC CAGCTTATGC TCGGGCCCTT GGTGTCAATA	240
TTGACGAATT GCTCTTGTCT CAACCAGACT CAGGAGAGCA AGGTCTTGAG ATTGCGGGAA	300
AATTGATTGA CTCAGGTGCA GTTGATCTTG TCGTAGTCGA CTCAGTTGCT GCCCTTGTTT	360
CTCGTGCGGA AATTGATGGA GATATCGGAG ATAGCCATGT TGGTTTGAG GCTCGTATGA	420
TGAGCCAGGC CATGCGTAAA CTTGGCGCCT CTATCAATAA AACCAAAACA ATTGCCATTT	480
TTATCAACCA ATTGCGTGAA AAAGTTGGAG TGATGTTTGG AAATCCAGAA ACAACACCGG	540
GCGGACGTGC TTTGAAATTC TATGCTTCAG TCCGCTTGGA TGTTCTGGT AATACACAAA	600
TTAAGGGAAC TGGTGACCAA AAAGAAACCA ATGTCGGTAA AGAACTAAG ATTAAGTTG	660
TAAAAATAA GGTAAGCTCCA CCGTTTAAGG AAGCCGTAGT TGAAATTATG TACGGAGAAG	720
GAATTTCTAA GACTGGTGAG CTTTGAAGA TTGCAAGCGA TTTGGATATT ATCAAAAAAG	780
CAGGGGCTTG GTATTCTTAC AAAGATGAAA AAATTGGGCA AGGTTCTGAG AATGCTAAGA	840
AATACTTGGC AGAGCACCCA GAAATCTTTG ATGAAATTGA TAAGCAAGTC CGTTCTAAAT	900
TTGGCTTGAT TGATGGAGAA GAAGTTTCAG AACAAGATAC TGAAAACAAA AAAGATGAGC	960
CAAAGAAAGA AGAAGCAGTG AATGAAGAAG TTCCGCTTGA CTTAGGCGAT GAACTTGAAA	1020
TCGAAATTGA AGAATAAGCT GTTAAAGCAG TGGAGAAATC CGCTACTTTT TCGATTTTTG	1080
ATTCAGTTT TTAGATTATA TATAGTAGCT TGAATAAGA TATGAACAAC TCTATTAGGA	1140
AAGTCAAATT AATTCTAGA AATGTTTTAG CAGCTACAGC GTACTATTCC AAACCAACC	1200
AACTATAATA GATCGAAACT AGAATAGTAC ATATCTACTT CTAAACATT GTTAAAAATC	1260
GATTTGACTT TCCTTATTTT ATCCGCTAT ATATAGTTTG CTGTTTCTTG TCGCTCCTCT	1320
GGAAAGCTGA TATAATAGCT TTATGAATAA AAAACGAACA GTGGACCTGA TACATGGTCC	1380

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GATTCTTCCC TCGCTCTTAA GCTTCACCTT TCCAATTTTG CTATCAAATA TTTTCAACA	1440
GCTCTATAAC ACTGCTGATG TCTTGATTGT TGGACGATTT CTTGGTCAAG AATCCTTGGC	1500
TGCAGTAGGA GCGACGACAG CGATTTTGA CTTGATTGTA GGTTTTACAC TTGGTGTGG	1560
CAATGGCATG GGGATTGTCA TTGCTCGTTA TTATGGGGCT CGGAATTTC AATAAATCAA	1620
GGAAGCAGTA GCAGCCACCT GGATTTTAGG TGCTCTTTTG AGCATTTCTAG TTATGTTGCT	1680
GGGCTTTCTT GGCTTGTATC CTCTCTTGCA ATACTTAGAT ACTCCTGCAG AAATTCCTCC	1740
TCAATCTTAT CAATATATTT CTATGATTGT GACCTGTGTA GGTGTCAGCT TTGCTTATAA	1800
TCTTTTGTGA GGCTTGTGTC GGTCTATTGG TGACAGTCTA GCAGCCCTGG GATTTCTGAT	1860
TTTCTCTGCC TTGGTTAATG TGGTCTGGA TCTCTATTT ATTACGCAAT TGCATCTGGG	1920
AGTTCAATCC GCAGGACTTG CTACCATTAT TTCGCAAGGT TTATCAGCGG TTCTCTGCTT	1980
TTATTATATT CGTAAAAGTG TGCCAGAACT CTTGCCACAG TTAAACATT TCAAATGGGA	2040
CAAAAGCTTG TACGCGGATC TCTTGAGCA AGGTTTGGCT ATGGGCTTGA TGAGTTCAAT	2100
TGTATCTATC GGCAGTGTGA TTTTACAGTT TTCTGTTAAT ACATTTGGTG CAGTGATTAT	2160
TAGTGCCAG ACGGCAGCTC GACGCATTAT GACCTTTGCC CTTCTTCCTA TGACCGCTAT	2220
TTCTGCATCA ATGACGACCT TTGCTTCTCA GAATCTAGGA GCTAAGCGAC CTGACCGTAT	2280
TGTTCAAGGT CTTGGAATCG GCAGTCGTTT AAGTATATCC TGGGCAGTTT TTGTTTGTAT	2340
TTTCCTCTTT TTTGCCAGTC CAGCTTTGGT TTCCTTCTTG GCTAGTTCGA CAGATGGTTA	2400
CTTGATAGAA AATGGAAGTC TCTATCTGCA AATCAGTCA ACCTTTTATC CCATTTTGAG	2460
CCTCTGTGTG ATTTATCGCA ATTGCTTGCA GGGCTTGGG CAAAAGATCC TTCCTCTAGT	2520
TTCTAGCTTT ATTGAACTAA TCGGAAAAAT CGTTTTTGTG GTTTTGATTA TTCCTTGGGC	2580
AGGATATAAG GGTGTATCC TTTGTGAACC TCTTATCTGG GTTGCCATGA CAGTCAACT	2640
GTAATTCTCA TTATCCGTC ATCCCTTGAT AAAAGAAGGC AAGGCAATCT TGGCAACCAA	2700
AGTGCAATCC TAGTTGGATT TACTGAATAA AATCCATTTC CTCTAGTGAA AATCGAAAAA	2760
ACTTGTGTTT TCTTCTTTAG TTTGGTGTG AAAATAGTTT AACAGACTTT TGAATTCTTT	2820
TATATGATAT AATAAAGTAT AGTATTTATG AAAAGGACAT ATAGAGACTG TAAAAATATA	2880
CTTTTGAAAA TCTTTTGTAG CTGGGGTGTG ATTGTAGATA GAATGCAGAC CTTGTCAGTC	2940
CTATTTACAG TGTCAAAATA GTGCGTTTTG AAGTTCTATC TACAAGCCTA ATCGTGAATA	3000
AGATTGTCTT CTTTGTAAAG TAGAAATAAA GGAGTTTCTG GTTCTGGATT GTAAAAAATG	3060
AGTTGTTTTA ATTGATAAGG AGTAGAATAT GGAAATTAAT GTGAGTAAAT TAAGAACAGA	3120

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TTTGCCTCAA GTCGGCGTGC AACCATATAG GCAAGTACAC GCACACTCAA CTGGAATCC	3180
GCATTCAACC GTACAGAATG AAGCGGATTA TCACTGGCGG AAAGACCCAG AATTAGGTTT	3240
TTTCTCGCAC ATTGTTGGGA ACGGTTGCAT CATGCAGGTA GGACCTGTTG ATAATGGTGC	3300
CTGGGACGTT GGGGGCGGTT GGAATGCTGA GACCTATGCA GCGGTTGAAC TGATTGAAAG	3360
CCATTCAACC AAAGAAGAGT TCATGACGGA CTACCGCCTT TATATCGAAC TCTTACGCAA	3420
TCTAGCAGAT GAAGCAGGTT TGCCGAAAAC GCTTGATACA GGGAGTTTAT CTGGAATTAA	3480
AACGCACGAG TATTGCACGA ATAACCAACC AAACAACCAC TCAGACCACG TTGACCCTTA	3540
TCCATATCTT GCTAAATGGG GCATTAGCCG TGAGCAGTTT AAGCATGATA TTGAGAACGG	3600
CTTGACGATT GAAACAGGCT GGCAGAAGAA TGACACTGGC TACTGGTACG TACATTGAGA	3660
CGGCTCTTAT CCAAAGACA AGTTTGAGAA AATCAATGGC ACTTGGTACT ACTTTGACAG	3720
TTCAAGGCTAT ATGCTTGCAG ACCGCTGGAG GAAGCACACA GACGGCAACT GGTACTGGTT	3780
CGACAACCTA GGCAGAAATGG CTACAGGCTG GAAGAAAATC GCTGATAAGT GGTACTATTT	3840
CAACGAAGAA GGTGCCATGA AGACAGGCTG GGTCAAGTAC AAGGACACTT GGTACTACTT	3900
AGACGCTAAA GAAGGCGCCA TGGTATCAAA TGCCTTTATC CAGTCAGCGG ACGGAACAGG	3960
CTGGTACTAC CTCAAACAGG ACGGAACACT GGCAGACAAG CCAGAATTCA CAGTAGAGCC	4020
AGATGGCTTG ATTACAGTAA AATAATAATG GAATGTCTTT CAAATCAGAA CAGCGCATAT	4080
TATTAGGTCT TGAAGAGCT TAATAGTATG CGTTTCTTG TGGAGATATT TCCTTCAATT	4140
TTGCTACTAT ATTAACAAA AATCAAAAAG CAACTAGAA AGTTATGCTC AAATAAAATC	4200
TAAATTTGAC AATGTAAACC GAGTCGGATA GCTTTAAGTA CTGTTTTGAG GTTGAAGATA	4260
CGATTTTTGA TAGGAACTCA TCAATTTTAG ATTTTAAAGC AGCATCAATA AATTGCTTCC	4320
TTGTTTTGTC ATAATTTTTT TATTTAAAAA ATTATGACma GAGTGTGCTA TTCTTTTTAT	4380
GAGAGGTGTA TGAATATGAT AAATGTATGT GATAAATGTA TGTGATGTTG GAAAAAGAAT	4440
AAAAGAACTT AGAATATCTT CAAATCTTAC TCAAGATAAG ATTGCTGAGT ATTTGTCTTT	4500
GAATCAAAGC ATGATTGCCA AAATGGAAAA AGGTGAAAGG AATATCACGA ATGGATTTAA	4560
GTAATAAAGC TTCAAATCTT AGAAAAAGT TGGGAGCTGA TGGTGAATCG CCGATAGATA	4620
TTTTTAAATT GGTACAAAAG ATAGAAAATT TGACGCTGGT ATTTTATGGA CTCGAAAGA	4680
ATATTAGCGG AGTCTGTTAT AAAGGAACTC AGTTCAGTCT CATTGCAGTC AATTCAGACA	4740
TGCCATTAGG AAGGTAAAGA TTTTCTTTAG CACATGGACT GTATCATCTT TATTATGATG	4800
AGGTGAAGAA GAGTTCAGTC AGTCTTATCT TGATTGGTGA AGGAGATGAA ACTGAAAGAA	4860
AAGCGGATCA GTTTGCTTCT TATTTTTTAA TTTTCCCATC TTCACTGTAT AGGATGGTTG	4920

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AGGAAATCAG AGAAATGCC AATAGAACTC ATCTTGAAGT AGAAGATATT ATAAAAATTGG	4980
GTCAGTTTTA TGGTATCAGT CATAAAGCTA TGTATATAG ATTGAGGAAT GATGGATACC	5040
TTGATGCAGA AGAAATTAAG AATATGGATA TTAGTGTTAT AGAGACAGCT TCAAGATTAG	5100
GCTATGATAC AAGTTTATAT CGTCCTTTGT CAGAAAGTAA AAAAGAAATG GCATTAGGAT	5160
AATATATTAA TTCAACTGAA CAACTTTTAG AAAATAACAG AATTTCGCAA GGGAAGTATG	5220
AGGAACGTGT ACTAGATGCT TTCAGATATG ATATTGTATA TGGGCTAGAT GAAGAGGGGG	5280
GAGTTGTCGT TTGACTAGTC GTGTATTTAT TGATGCAGAT TGTATTTTATG TATTTTATG	5340
GGTTGGCACT GAACATCTTT TAGAAAAGCT CTATTTGGGT AAAATTGTTA TTCCACAAGA	5400
GGTGTATGAT GAAATCAATA TACCTACAAT TCCCCATTTA AAATCTAGGA TAGATCAGTT	5460
GGTAGCTAAG GGTTCAGCTG AGATTGTGAG CATAGACATT GGAAGTGAAG AATACGCATT	5520
ATATAGAGAT TTAACAAGAA ATCATGATAG TAACAAGATT ATTGGTAAGG GAGAAGGGGC	5580
ATCTATTTCC TTAGCGAAAA AGCATAATGG GATATTAGGA AGTAATAACC TAAGAGATGT	5640
TAAATCATAT GTAGAAGAAT TTTCTTTAGA ATATATGACA ACAGGAGATA TACTGATTGA	5700
AGCGTTTAAA GCGTAATTTA TTAAGTAATA AGAGGGCAAT CATATCTGGA ATAATATGCT	5760
TAAAAAGAGA AGGAAAATTG GTGCAAATTC ATTTTCAGAC TATCTTCGTG GAAGTATTCA	5820
TCAAAATAGA CAAAAATAAA TTTGGATAAA TCGAACTCAC TATTCAGGAG GCATATGAGC	5880
AATTCGAAAA AGAAAAGTGT CAAATTGAGC CTATAGGAGT AGAAGTGAAA TAGTAAGTCC	5940
TGCATAGTGG ATGAGAGAAA AGTTCTCCTT GAAGTTTCC TGAAGTATCA GTCGCATGTC	6000
AAACGATATG TAGGGTAATG TGAGAGGGGA TAGCGAGTAG TTTTGGTTA TTTTATCAAA	6060
AAACTTATAT TTTATTATAC CGAATGATAA AATATAATAA AAATGATAGA ATAAGGAAAA	6120
AACATGAATG TCAAAAAGAT AATGTCAATT TTTCAATCCT TTTATGTGA TGTCAGTATT	6180
GAGGAACTGA CTTTGACTTT ACCAATCAGT TTTGTAAAAA GGTTCAGTA TACTCAAATG	6240
ACTTTTCATA AGGAATCATT TTTATTGATT AAAGAAAAGA GAAGGGGAG TTTGAGTTCA	6300
TTTGTTACTC AGGCTCGCAC TATGGGTGAA AAAGCCAATA TGGATGTTGT TTTGGTGT	6360
TCGAAGTTAT CAGACAGTGA AAAAAAGCAA TTAAGTCAAG CTAGAGTTCC GTTTGTAGAC	6420
TTTAAGGGAA ACCTCTTCTT CCCTCCATTG GGAAGTAGTAC TCAATGCGAA TGATACTGAA	6480
GTCCCTAAGG AATTAACACC TAGCGAACAA TTAACGTGGA TTGCCTTTTT ATTGACAAAA	6540
GGTCAAAAAG TAGTAGATGT TGATTTGCTT TCACAAGTCA CTGGACTTCC AAAGTCAACA	6600
ATTTATAGGT GTTTGAGGAC TTTTAAAGCT TTATATTGGT TAAACAAGCA AAATAAGCTT	6660

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TACACATATA CGGTGTCAAA GAAAGAATTA TTCTTAAAAAT CCGTGTCATG TTTATTTAAT	6720
CCCATCAAAA AACGGATTTT ATTGCCAGAT GGCGATATAA AGCAGATAAA ATCTGTTTCT	6780
AACCTTCTAT ATGGTGGTGC TTATGCTTTG TCGCATTCAA CTTTTTTAGC TGAAACGGAT	6840
GAAAAATATTA GCTATGTCAT ATGGCAGAGA AAATTCAATC AGTTATCCTT GCCACTTTCT	6900
CAGCATGTTT TAAAATGAAA GATGCTAGAG ATATGGAAAT ATCGTCCTTT TGTATCTGAG	6960
TTTGGAATG ATTTTAAAAA TAATCATGAT AAACAATTG TAGATCCGAT TTCTCTTTAT	7020
TTGACCTTAA AAGATGATGA TGACCCACGT ATAGAGGAAG AGAGTGAAGC ACTAGAAAAT	7080
ATGATATTAC AGTATCTGGG AGAAGATGAT GCCAGCTAAT ACGAAAGTTA TTTTCAAGA	7140
AATGTTTTCG GATTTTCAGA ACTATTATGT TCTGATTGGG GGAAGTCTA CCTCTATCGT	7200
ATTGGATTTC CAAGGATTTA AAAGTCGCAC AACAAAAGAT TATGATATGG TCATCATTGA	7260
TGAAGTAAAA AATAAGGAAT TTTATACTAC CTTGAATCAT TTTTLAGAAT TGGGAGAGTA	7320
TCAAGGAAGT CAGAAAGATG AGAAAGCGCA GCTTTTTCGA TTTACAACAA CTAATCCTGA	7380
GTTTCCTTCT ATGATTGAAC TATTTAGTAT CTTACCAGAA TATCCATTAA AGAAGGACGG	7440
TCGAGAAATT CCCTTACATT TTGACCAAGA TGCTAGTTTA TCAGCCTTAT TATTGGATGA	7500
AGATTATTAT AATATATTGG TGCATGAAAA AGAAACCATT CAGGGGTATT CGGTATTGAG	7560
TAATTGTGGT TTATACTCTT CGAAAATCTC TTCAAACCAC GTCAGCTTCC ATCTACAACC	7620
TCAAAACAGT GTTTTGAGCA GCCTGCAGCT AGCTTCCTAG TTTGCTCTTT GATTTTCATT	7680
GAGTATTAAT TATTTTAAAG GCTAAAGCTT GGCTGGATAT GAGGGAGCGC TCTGCCACAG	7740
GTGCTCAAGG TTAAAGTAAG TCCATTAAAA AGCATTTGAA TGACCTTACC CGTTTGACAG	7800
CTTCCTTGCT AGGAGATGAA AAGTTATCGG CTATAACATC AAGTAGTGG GTAAAAGCAG	7860
ACATGCACCG CTTTGTGATA GAATTAGAGC CTGTGAAGTC AACTATTCTT CAAAATAATG	7920
ACATTTTCATT GGATCAAAAT GAAATTTTGG AAATTCTGAA AAATTTTCTC GATGGTTAAA	7980
ATAATTGTAG CGAGATGGCT ATATTGAATT CGTCTATATC TGGAAACTAG AAAAACTTC	8040
AATTTTCAGGA GAAAATGAAG TCAATCTTCC CACAATCAAA CGTATAGTAT CAAGGTTTTT	8100
CAAGACCTGA TATTATGCGT TTTTTCCTTT TCAAACTTTT TTGCCCAGTC TTCGTTTTTA	8160
TCCTCTAGTC ACTTGATTG TTTTCAGGTGG TTTTTCAGTA TAGTAGAATG AAACGAGAAC	8220
AGGACAAATT GATCAGGACA GTCAAATCGA TTTCTAACAA TGTTTTAGAA GCAGAAGTGT	8280
ACTATTCTAG TTTCAATCTA CTATAGTTAA ATCTGCGGTC AAGTCTACTG GTGAATCTAT	8340
GATTGTAATA CTCTCCAAA ATCTCATCAA CCACGTCAGT CTTGCCTTGC AGTCTGTATC	8400
TTACTGACCA AGCTAGTGAT GGATTTAGAA TAGGTGATTT GGAGCGCTCT ATTAGCTAGG	8460

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AAATGCTGCT CATAGTCCTT TGCTGAGGCT AGGGTGTTTC AACATTCAAC ACTCAACTGG	8520
TTGATCTAGT TGATAGGAAG GGAGTTACTA TAAATACTC AGGCTTCCAT CATATTTTTT	8580
GAAACGATTG TGTAATCAAA ATGTACCAAT ATTGTAGTAT TGGTACAGAA GATGTTGTGA	8640
ATGGATAAAT ATATCATAAC TGCTATCTCA AAAAGATTTC ATATGTCTGT GCATATATAA	8700
TAGACTTCCT GCAAACTAG AATCCTAGTT CATGATTGAT AATACCAGCA ATCAAATTCA	8760
TTCGTAATCC AAAGCGTTTA CGATGATTTC GATAGGTTGT TGAAAACATT TTAAACGTTT	8820
CTACTTTGGC AAAGATGTTT TCAACCTTGC TTCTCTCCTT AGATAGCGCA TGGTTATAGG	8880
CTTTATCTTC AGCTGTTAGC GGCTTGAGTT TGCTGGATTT ACGTGGAGTT TGTGCTTGAG	8940
GACATATCTT CATGAGCCCT TGATAACCAC TGTCAGCCAA GATTTTACCA GCTTGCCGA	9000
TATTTCTGCA ACTCATTTTG AACAACTCA TATCATGACA ATAGTTCACA GTGATATCCA	9060
AAGAAACAAT TCTCCCTTGA CTTGTGACAA TCGCTTGAGC CTTTCATAGCG TGAAATTTCT	9120
TTTTACCAGA ATCATTGCGT AATTCTTTTT TTAGGGCGAT TGATTTTTAC TTCCGTCGCA	9180
TCAATCATTA CCGTGTCCCTC AGAACTAAGA GGAGTTCTTG AAATCGTAAC ACCACTTTGA	9240
ACAAGAGTTA CTCAACCCA TTGGCTCCGA CGGATTAAAGT TGCTTTCGTG AATACCAAAA	9300
TCAGCCGCAA TTTCTTCATA AGTGCGGTAT TCTAGGCTTA ATTTAGGTTT TCGTCCACCT	9360
TTTGCGTGTT TAAGTTGATA AGCTGTTTTT AATACAGCTA ACATCTCTTT AAAAGTCGTG	9420
CGCTGAACAC CAACAAGACG CTTAAATCGT GTATCAGTTA ATTGTTTACT TGCTTCATAA	9480
TTTCGCAGGG AGTCTATTGA CTCTTTGGTA GGTGTCAATG TTTTTCAT CTATCCCGAG	9540
AATTATTTTC CCGCCATTTG TATTTGCAAA TGCTGAGTAG GTTCCCAGA AAGACTCTGG	9600
AAGATTGTTT TTAGCTTTTT TGTATTCTAA ATCAACCCCT TCAAATTTTA AGTCCATATT	9660
TTTCCTTTAC ATCTGTTTTT TGTGGTCTG GTATTGTTC AAGTTGAGTG ATAATATAGC	9720
GAATTGAATT TCGAGAGTTT TTAATCAGTT AATTCTTTT TTAACCCACT TTAATTGCTT	9780
TTTTAACACG GGTTAAAAAA GAAATTAAAG TGGGTAAATT TTTCTTGA	9828

(2) INFORMATION FOR SEQ ID NO: 42:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3369 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 42:

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CCGCGAAAGA TATTTTGTAA CAAGAGTTTG GACGTGAGGT CCGTGGCTAT AATAAAGTAG	60
AAGTTGACGA GTTTTGTAGAC GATGTCATCA AGGACTATGA AACCTATGCT GCCTTGGTCA	120
AGTCACTTCG TCAGGAAATT GCGGATTTGA AGGAAGAATT AACTCGTAAA CCGAAACCTT	180
CACCAGTTCA AGCAGAACCC CTTGAAGCGG CAATTACAAG TTCTATGACG AATTTTGATA	240
TTTGTAAACG CCTGAATAGA TTGGAAAAAG AAGTTTTTGG TAAACAAATT TTAGATAACT	300
CAGATTTTGA AGTAGTTATT TGAGATGTGC AATTTTGGGA TAATCGCGTG AGGAGAATTG	360
TTTCTCATGA GGAAAGTCCA TGCTAGCACA GGCTGTGATG CCTGTAGTGT TTGTGCTAGG	420
CGAAACCATA AGCCTAGGGA CGAGAAATCG TTACGGCAGT TGAATGGCT AAGTCCTTGG	480
ATAGGCCAGA GTAGGCTTGA AAGTGCCACA GTGACGGAGT CTTTCTGGAA ACAGAGAGAG	540
TGGAACGCGG TAAACCCCTC AAGCTAGCAA CCCAAATTTT GGTGGGGCA TGGAGTACGC	600
GGAAACGAAC GTAGTATTCT GACTGCTATC AGCTAGAGCT GTTAGTGGTA GACAGATGAT	660
TATCGAAGGA AGTGGTCCTA GTCACCTCTG GAACAAAACA TGGCTTATAG AAAATTGCAT	720
ATAGGTTGGG GCTGAGAAAT TTTCTCAACC TCATTTTTTA AAGTGGACAT ATAGAAAGGT	780
CTTGCAAGAC TGTAACATGA AAAAAGAATT TAATTTAATT GCAACTGTGG CAGCAGGGCT	840
TGAGGCTGTC GTTGGTCGTG AAGTGCGAGA GTTGGGCTAC GATTGTGAGG TTGAAAATGG	900
ACGTGTTTCG TTTCAAGGAG ACGTGAGAGC TATTATCGAA ACCAACCTTT GGCTTCGGGC	960
AGCAGATCGT ATCAAAATTA TCGTAGGAAC GTTCCAGCT AAGACTTTTG AAGAGCTATT	1020
TCAGGGAGTT TTCGCTTTGG ATTGGGAAAA TTATTTACCA CTGGAGCTC GGTTCCTGAT	1080
TTCAAAAGCT AAATGTGTTA AGTCCAACT TCACAATGAG CCCAGTGTC AGGCTATTTT	1140
TAAGAAAGCT GTTGTCAGA AATTGCAGAA AACTATGCT CGCCAGAGG GGGTTCCTCT	1200
GATGGAGAAT GGCCAGAGT TTAAGATTGA GGTCTCTATT CTCAAAGATG TGGCAACTGT	1260
CATGATTGAT ACGACCGGT CTAGCCTCTT TAAACGTGGT TATCGTACCG AAAAAGGTGG	1320
CGCTCCTATC AAGGAAAATA TGGCAGCAGC CATTTTACAA CTTTCTAACT GGTATCCAGA	1380
CAAGCCTTTG ATTGATCCGA CCTGTGGTTC GGGGACTTTC TGTATTGAGG CAGTTATGAT	1440
TGCTAGAAAG ATGGCGCCAG GTCTTCGTCT CTCTTTTGCA TTTGAGGAAT GGAAGTGGAT	1500
CAGCGATCGC TTGATTCAAG AAGTGCGCAC AGAAGCGGCT AAAAAAGTAG ACCGTGAGCT	1560
TGAGCTGGAT ATCATGGGCT GTGATATTGA TGCTCGCATG GTGGAAATTG CTAAGGCCAA	1620
TGCTCAGGTA GCTGGTGTG CAGGAGACAT TACTTTTAAG CAGATGCGCG TGCAGGATTT	1680
ACGTTCCGAT AAAATCAATG GAGTAATCAT TTCCAATCCG CCTTATGGTG AACGTTTGTC	1740
AGATGATGCA GGGGTGACCA AGCTCTATGC TGAGATGGGG CAAGTATTTG CACCGCTGAA	1800

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AACTTGGAGC AAATTTATCC TGACTAGTGA TGAAGCTTTT GAAAGCAAGT ATGGTAGCCA	1860
AGCAGATAAG AAGCGTAAGT TATACAACGG AACCTTGAAA GTGGATCTAT ATCAATATTT	1920
TGGTCAGCGT GTCAAACGGC AAGAGGTAAA ATAGAAAGGG ATACTCATGA GTAAAAAAG	1980
ACGAAATCGT CATAAAAAAG AAGGTCAAGA ACCGCAATTT GATTTTGATG AAGCAAAAGA	2040
GCTAACAGTT GGTCAAGCTA TTCGTAAAAA TGAAGAAGTG GAATCAGGAG TCTGCTCTGA	2100
GGATTCCATT TTGGACAAGT ATGTTAAGCA ACACAGAGAT GAAATGAGG CGGATAAGTT	2160
TGCGACTCGT CAATACAAA AAGAGGAGTT CGTTGAACT CAGAGTCTGG ATGATTTAAT	2220
TCAAGAGATG CGTGAGGCTG TAGAGAAGTC AGAAGCTTCT TCGGAGGAAG TTCCATCTTC	2280
TGAAGACATC TTACTACCCT TGCCTCTGGA CGATGAGGAG CAAGGCTTGG ATCCTCTATT	2340
GCTAGATGAT GAAAATCCAA CAGAAATGAC TGAAGAAGTG GAAGAGGAGC AAAACCTTTC	2400
TCGCTCTGGAT CAAGAGGACT CAGAAAAGAA AAGTAAAAA GGCTTTATTT TGACCGTTTT	2460
GGCGCTTGTA TCAGTAATTA TTTGTGTGAG TGCTTATTAT GTCTACCGTC AAGTGGCTCG	2520
TTCGACTAAG GAAATTGAAA CTTCTCAATC AACTACAGCC AATCAATCGG ATGTGGATGA	2580
TTTTAATACA CTTTATGACG CCTTTTACAC AGATAGCAAT AAAACGGCTT TGA AAAATAG	2640
CCAGTTTGAT AAATGAGTC AACTCAAGAC TTTACTTGAT AAGCTGGAAG GTAGTCGTGA	2700
ACATACGCTT GCCAAATCTA AATATGATAG TCTAGCAACG CAAATCAAGG CTATTCAAGA	2760
TGTCAATGCT CAATTTGAGA AACCAGCTAT TGTGGATGGT GTGTTGGATA CCAATGCCAA	2820
AGCCAAATCG GATGCTAAAT TTACGGATAT TAAAACTGGA AATACGGAGC TTGATAAAGT	2880
GCTAGATAAG GCTATCAGTC TTGGTAAGAG CCAGCAAACA AGTACTTCTA GCTCAAGTTC	2940
AAGTCAAAT AGCAGCTCAA GTTCAAGTCA AGCAAGTTCA AATACGACTA GTGAGCCAAA	3000
ACCAAGTAGT TCAAATGAGA CTAGAAGTAG TCGCAGTGAA GTCAATATGG GTCTCTCGAG	3060
TGCAGGGGTT GCTGTTCAAA GAAGTGCCAG TCGTGTGGCC TATAATCAGT CTGCTATTGA	3120
TGATAGTAAT AACTCTGCCT GGGATTTTGC GGATGGTGTC TTGGAACAAA TTCTAGCGAC	3180
TTCACGTTCA CGTGGCTATA TCACTGGAGA CCAATATATC CTTGAACGTG TCAATATCGT	3240
TAACGGCAAT GGTATTACA ACCTCTACAA GCCAGATGGA ACCTATCTCT TTACCCTTAA	3300
CTGTAAGACA GGCTACTTTG TCGGAAATGG CGCTGGTCAT GCGGATGACT TAGATTACTA	3360
AGCAGTCGG	3369

(2) INFORMATION FOR SEQ ID NO: 43:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 9713 base pairs

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(B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 43:

AAGTTTACAA TTAAATGAA TTAACAATTT TCCCAACTAA AAGCACTCCA GTTACCGCAA	60
CGTTTGACT GAATGTACTA AATCGCATTC CATCAACTTC ATCTGTTTCG TCAACTTGAA	120
CAGATACTAA TTGAAGATTT AATACTTCTG CTGCCATAGC TAGCTCCTCC TATTTAAATT	180
TTTGGGATTA AGTACTTTAT CCACCCTCAT ATACTCTCTC CACCAGTAAA ATGCAAGCAA	240
TGATACAAAA TAGATTTAAC TATTTTATAT AGCGAAAAC TACAAATTTT TAAGAAATAA	300
TTTTTGCAAT CTAAAGATA AAATAGGAAC TTTTAGTAAT AAATATTAAA ATAAATAAAA	360
TAATAGATAC TATAAATTT GGAAGTATTA ACCCAAAAG ATTCATATCA TCTATTAAAA	420
TATCCTCTAA AGAGTAGTAT ATTAAAGCCA TAATTTTAAT GTTAAGTAAA AATGCAATTA	480
ATGAAGTAAC AAATGTCAA AATATAGCCT CACCAACTTT AATCTTAACC ATCTGGTAAT	540
TAGAAGTCC TAAAATTTCA AATTGCTGAA TCTCAATCCT TTCTTGATGC GATGACAAAA	600
ATGCAATGA AATAATATTT GCAAGTACTA TCAAAATTGG TGCTCCTACA TAGACAATAA	660
ATGCTACTTT TAGCTCTAAA TCACTGTCAT CTTGAAATTG AGATAGTATA TTCTGAGAAA	720
TCATTTGAAA ACTAGAAATT AGTAATATAG CTCCTGTAAT TGCAGCACTG ATAGATTTTA	780
TATAAGACTT ACAATATAGT AAATCCACT TCGAAACAAT GAACATAAAA TTATTTCTAA	840
ATATAATTAT AGAAAGTAGT TTGATAAAAC ATGACTGTAT AAAAGGAGAT AATTGATAAA	900
TAATCACAAT ATCTAAGATT ACAATATTGA ATATTATCTG GGCCTTCGCT AAAATTGTGC	960
TATCTTGGA AATTTGTTGC AAAGAAAGCA ACCAGATAAC ACTAAAACCA GCCAATAGCA	1020
GTATTCCTTT TACTATTGAA AGAACATGCC TTATTTTGA ACTCTTCTTA TTTCTAATCT	1080
TCTTGAACGT ATAAAAGCAA CCACTTAGAA AGGCTAAAAA TGAAATCAAC ACTACTGTAA	1140
TGATACATCC AACAGCACTC GTTTGAAATT GGATATCAGG TAATATATTT TCCCCGAAAA	1200
AGTATTGTAA AAAATAATAA TAATTTGACG TAACAAATAT AGAGCATAGA TATGCAATAA	1260
AACTAATAAT CGAGGAAATG ATAAAAATCT GTCCCCCAC AAGAAATGAT AGTTGAAGGC	1320
GACTTGCTCC CAACACCTCC AGAAGTTCGT AATCATCTCT AAAAATTTCA ACCAACATAT	1380
TTATTATGTT AGAGAGCACA AAGAATAATG TTAATCTCTC GAATACTATC GGAAACATAA	1440
AAATTGGTTT AGGATCTGGA AGTCCGACAA ATACTTGCGA ATTATTCTCA ACATTAATTA	1500
CCCCATTAAC AGCCAATCCC ATAATAAAC TCGAAACAAA AATTACTGGT GAAACGCCTA	1560

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ACCATTGTTT CTTATTATGT AAAAATTGAT AGTAACTAA TCTGAGCATC TCTATTCCTC	1620
CGTAGTTGAT TGTACCTCTA AGATTTTATA CAACTCTTCC CCGCTAGGTC TATGAAGTTC	1680
TTTGAAAATT TTTCCATCTT TCAATATTAA TGCACGATCA GTTTTCGAGG CCAATTCTAT	1740
ATCGTGCGTT ACCATAATTA CACACTTACC CGCCCCTACT AACTCTCTCA ATAATTCAAA	1800
AATTACTTCA CGAGAAACGC TGTCTAAAGC CCCAGTTGGC TCATCAGCAA ATATTATATC	1860
ACTATCAGCA ATAACCGCTC TAGCTATAGC AACCTTCTGT TGTTCTCCAC CAGACAGAGT	1920
TCCAACAAAA TCGTTTAAGC CAGCATTAAA CTTCATTCTT TTGAGTAAGT TTTCTACATT	1980
TTTAATAGTT AATTTTTTTT GTGATAATCG CAAAGGAAGT GCTATATTTT CTATTACCGG	2040
CAGGGAAGGT ATTAAATTGT ATGCTTGAAA TATAAAAGAT ACTTCGTTAC GTCTTATACT	2100
TGACAATTTT GCATTTCTGA TTTTATAGGG GTTGATTCCA TTTAAAATTA CTCCCCACT	2160
TGTTGGTTCA AGCAAAC TAG AAATACATTT TAATAAAGTT GACTTTCCAG AACCCTAAT	2220
TCCTAGAATA CTTATAAATT CTCCTCTCGA AGCAGAAAGA GAAACATTTT TCAGCACTTG	2280
CAACGTTTTA TTATTTCTTA GTAAAAATTG ATGATACAGC CCTTTCACCT TTAATATATA	2340
ATCTTTATCC ATATTCTTGC CTCCAATCAC TTAATTTTGA AAAGTGTTCC ATTTTCCAAT	2400
TTATATATAT CAGTGTATCT CTTGTCATTT AAGTCATAAT GATGTGAAAC TTCAATAAAT	2460
GAAATACCTA AATTGAACAG AATATCATGT ATGGAATTTG AATTATCATT ATCTAAATTA	2520
GCTGATATTT CGTCAAATAA GTACACTTTA TTATTTCTAA TCAGAGCTCT AGCTAAAGCT	2580
ATTTTTTGT TTTGACCTCC AGACAAATTA CTACCATTTT CACCACATTG ATAATTTAGT	2640
ATATCTATCT TTTCTAATTC TTCATATAGA TTTACCTTTT TTAACACCTC AATTATCTGA	2700
TCATCTGAAA AATATTCATT TTGAAATAAA GTTACGTTCT CACGAATAGT AGTGTCAAAA	2760
ATATATGGTG TCTGATCAAC TGTTGGTATT GAATCTGAAC TCTTTTCCC ATGTGATAAC	2820
AAATTTACAT AACCTTTTTG TGGCTTTAAA GAACCATTAA TTAAATTTAA AATCGTTGTT	2880
TTCCCCACTAC CAGAAGTTCC TGTTAATAAT ACCCTAAATG GTGACTTAAA TGAGAAGTCA	2940
ATACTTAATT TATTTTCTGG TGTAATAGAA TATACAACAT CTTTCATGTG TATCTCATCT	3000
ATTGATGAAG TATACAGTCC GTTATTATCA TGTTTCAGCGT CTATAAAATT CTCTCTCCA	3060
CTTAAGTATT TTA AAAACGG TTTCCTTAAA TCTTTGGTTG TATTTATCTT ATTTAATGAA	3120
TAGGCAATTG ATTGTATCGG CCCTAAACT TTATCGTTTG CTAAGAAAAT ACCTATCAGT	3180
TCACTAAAAG AAAGGCTTTT ATGATAAATT ACAAATAAC ATCCTACAAC CAAGGGAAT	3240
AGAAAGCAAA AACCTGAAAT TAGTACTGCA ACCAATTTTG AAAGAACCTC TGATCGTTTC	3300

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AAATTAAAG TAGAATCTTC TAGTTTATCC AACTTTTAT CCGACAAACT AATTATTTCT	3360
TTAGTAACAG AATAAGATTT TAATGTCTTA AAACCATTA AAATTTCTTT TATTATGTGA	3420
GTATACTCTG CATTGCTGTT AGAGTACTCA TTAGCTGAAT TAGACAACAT CTTCTTCATA	3480
AAGACAGGTA CTATAATCGG CAATGCTGAT AATACAATAA ATATTATTGA NACTAGGAAG	3540
TTTAAATAAA GCATAAACT TAGAGAGACG ATGAACAACA ATATTGAAGA AATTATTTCA	3600
AAAATTTGTC TAAAATAGTT TTCTTCGATT AATCTCAAAT CATTTGACAA AACTGAAATA	3660
ATAGATGAGT AATCTTTAAC CATTTTCAGAA GAAAGATACT GTTCTCTAAA ATATCCTTGT	3720
TTAATTTTCA CATTTATATC TTTAGTTATT GATGCTTCCG TTACTTCTAA ATAGTAATTT	3780
GATATATAGA TTGCTGACCA ACCCAGAATA CTTATAGCAC CAAATCTTAG AACGTCAGAA	3840
AATGAGGAAG TCTGATTTAA ACTACCTGCA TATACAATAA TTCCTGAGAG CAAGACACCA	3900
TTAAACGAAG ATAGAAATAT TAAAATCCCC ATTAATATAA GTTTAGTCTT TTTTATAAAT	3960
TTTAAATAAT TCATAAGTTA TTCCTTCCCA CTTCTTCAA GAAATAATTT AAAGTATCAA	4020
TCATTAAGAG AACATCTGAT GGAGTAAAAC CTCCATGACC AGCTGCTTTG TTTAAATACA	4080
ACAAACTTTT AACTCCAATA GAATTTAATT TCTTTGACCA CTCTATCACT TCGTTATTAT	4140
TAATATATGG GTCTTTCTCA CCCAAAATAT TAACTATAAC AGTATTTGAG TCTCGTGCCT	4200
TTTCAATATT TTGCATAGGC GAATATGACT TTATATAAGC CTTTACTTCA GGGTCTCTAA	4260
TATCTCCCCA CTCTGCTATT TCGGTCTTAG AAAGAGGATC ATTTGGATTC TGAAGTGAT	4320
CATAAGGATT TATAAATGGC GAAAATAAGA GAATGCTTTG CAATAAATTT TTTTCTCGT	4380
TCAACACCGC ACCAGCAATT ATTCCACCTG CACTAGAAGT TATTAAACCT AATCGCTTAC	4440
TGTCAATTAC ATCATTTTCC CTTAAATAAT TTACTCCCTC AATAAAATCT CTGATAGAAT	4500
TCCATTTGTT TAACGCCTTT CCTGAGCGAT ACCATTACAC ACCCAAATAG CCTCCACCTC	4560
TTACATGAAC TATAGCATAA ATAAAACCTG CATCTATTAT AGATAACATA ATTTATCTA	4620
AATCAGAATT ATCATTTCTA CCATAAGCCC CATAGACACT TAGAATACAT TTTTTCTTC	4680
TTGGGAGCTC ATCCGTATCT TCACTTTTC AAAATAAAGA AATCGGTATG CTTACATCAT	4740
AACTGTCTTT TTTAGTCCAA ATCACCTTAG AAAAATATTT AGTATTATTC GATTTTATGA	4800
TGGGTCTTTC AAATTCAGTT TTTAATGTAT TTTCTATTAA ATCAAACTA AGTATTTTTT	4860
CGTAAAAAGT TCTCCTCTCT AAAAACAGAA GAACACGATC AGAAAATGAA TTTTCATAAA	4920
GTGTTGTCTT TTCATCAAAT GTTATCTTAT TAACACTCAA CTCCCTCAA CTATTATTTT	4980
TAAATGTAGC AAGATAAAG ACGGAATTCG CTGCGTTTGA ACAGTCTAAA AGGATATAAC	5040
GTCCTATACA GTGAACTCTT CTAGCCCTAT CTTGATATGG TATAGTAATA GAACTCTGT	5100

CTCCCGAAGA AGTTTCCCTT AGAATTAGTT GATCTTTCTT TTCTTCAGTT GAAGAGAGCC	5160
CAAGAAAGTA CTGTGCTTTT TCTGTACTAA ATAGAGCGAT ATCTCTAGGT GTTGGGGCTA	5220
CCGTTTCTGT GTAAGAGTGT CTAACAAAAC CCGTCCGGTC GAAACTGTAT AGAAAAATCC	5280
TGCCTTTCTG AAAGTCTACT GACTTTACAA AACAATTATT GCTATCAATG TGGACTATTT	5340
TTAATCGAAA AGAGCATTCG TTTTCTTCAA ACAGTTCCTC TTCTGTAAAG CTATCAAAAG	5400
ATTTATAGAA TAACTTACTT GGCCTCCCGT ACTCTTTGGA GCGAGTATAC ATAACACCGA	5460
ATTTACCCAA ATAGAACGAA CTTTCTACTG AAATATCTTC AATGATAAAT AACTCTTCCA	5520
TAGTATATTT TTTTATTCCA ATTAAATTAG TCGTACGCAG TGAGGATACA ACCAAAACTA	5580
TATAACTCTC ATCAGATGAA ATCCTAACAT CCTGTAAGAT ACTATCATCT GGCAAAGTAT	5640
ATTTTCCAC ATCAAAGACA ATTTTAAGTG AATTTGAATT GTCTAAACTG GAAGAACTAA	5700
CCTTAGGAAT CCAGTCATTA TCTTCGACAT ACCATTCCTT TATTACACCA GTATTGGGTA	5760
TACTCCAATT ATCAAATTGG TACCAATATC GCCCTCTCCT AAATATCAAA GAATTCCATT	5820
TTTTTAATTC CTGAAATGAT GAAGAGATAG ACCTCTTATA GTGTGTTTTT TCCTGTATTG	5880
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ATATTATATT TGAGGAAGAA TCGTCAATTT ATTATCCATT ATTGATACCA ATCCAATTGC	6000
AACACCCGCA AATCCCGAAG CAATATCTGT TGTATCTTTT AAACCATTAT CTCCCGCAAT	6060
AACAAATCCT TCTTCAATTA CACACAAATA TCTATAAAGT TGTTCAATTA ATTTCTTTTG	6120
TCCTGAAAAG TTATCATCGA TATCACTATA TATATTATTA GCAACTTCAA GACCACAAAA	6180
TCCGTTAAT AAACCTGGTA ATACACAAAA AACTACATCA GTTGCCCTCT CTAAAGAAGT	6240
TAAATATTTT AAGTATTTGC TTGACAAGAT TTCTTTATTT CTATTAATAA GTAAAAGCAG	6300
GCCAGCACTT CCAGTTGCTA GATATGGTAG TAATCTATGA CCTTGGCTGT ACTGCAATGA	6360
ATTATTACTA TCTACTTTAT AAGCAACTAA TTCTTTATCT ACAGCCAATT CTAGACCATT	6420
TTTATAGATA CTTTCACCAG TTAATTTATA AGCTTCACCG AAGAGCCAAG CTACCCCTGC	6480
GTGACCATAT AGTAATCCAC CAAAATTCTC ATAAGGATCG TTA CTCTGAA CATCACTAGC	6540
GCCAACTTTA CAAAAGTTT CTGGATTTTC TATATAATTT AAAGTATATT CTCTAAGCCT	6600
AATTAGTATT TCTTCTCCTA GTTTATTATC AATTCCCCCT TTA CTAAAGAA AATACAGTCC	6660
AACCAGTAAA ATTCCAGCCT GCCCACTATA TAAATTTTTA TTTTGTGAAT TCTCAAATAT	6720
CTCTATAAAA TGAGTTGTAA AAAGTTCAAC TGCCCGATCT ATCTCCCCAA ATTCATAAAT	6780
GAGCCAGATT GTACCAATTT TACCATCAAA AAGACCAGAA AGGGACGATT TCTTAAATTT	6840

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ATTACTGCC TCATTAATAA CCTGTGTTTCG AATCTCATAA TAGTCATCAA ACTTGAAATT	6900
TTTACTTTC TTAGCTAGTT GTTGATAACT CCAAAGGATA GCTAAATCTG AAAACGCAAT	6960
TCCTTGATTA AAATTCAGAC CATAATAATG AACTGGGAAG AATCTTGATT GAAATCTTT	7020
ACGCCACTGT CCATAAGTTA GCGTAAACCC TCTCAATAAT TTTATAATAA AATCTTGAT	7080
ATCTTGCTCA CTCTCGATAG TTCTAATCTC ATGCATGGGT TTTAAAACCT TTTTCCTGGA	7140
AATATTCTCA ATCTGTGGAC ATTTAGAATC TAGATATGAC AATAAACTTT CTACATAATC	7200
TATATGTTCT CTGTGATAAC CCAAAGACTC AAATAGTTTT TTTCTTCTA TCCTGGTTTG	7260
ACTTACATAG TTGTATGTCA AATCCGATGT AGTTACTAGT GGCATGTATA AATAATGAGC	7320
TATTTGTCTA ATACCATACC AATCTATCTC ACTGGGAAGT GTTCTCGCC ATGCTCTAAA	7380
ACCAGGGGCT GCAACTTTAT GTACAACTTT TTCATCATTT GAAAAGACAG CTGTTCCCA	7440
GTCTATTATA CTAATCTCAT CTTATCCTT AACCAAGATA TTTCTTAAAT GTAAATCTTG	7500
ATGATATACA TTTTCAGAAAT GAACTTATT CGTTAAATCG ATGAGTTTTT CTACTATCTT	7560
TGAAACTCTC AATAGATAAT CTTTGGTCTT ATCAACAAC TCATATAAAG GAAATTTATT	7620
GGTAACCCAT CTATTTAGTG GAACGCCCTT CATATGTTCA ATTCCTAAGA AGGTGTGCTC	7680
CCAGATCTTA CCGTGCCAGT ATATTTTAGG CGTCTCACTC CATTCATTTA GAATTTTAG	7740
TGCTTTGCAC TCCGAAGCTA ATTTCTCTGA AGAATAAGTA CCATCAAATC CTAGACCTGT	7800
ATACGGTCTA GCCTCTTTTA AAATTATTTT TTTCCCATCT TCTTTTAGCC TAGCATTATA	7860
TATCCCACCA CTGTTTGAAA ATCTAATTGC ATTATCTATA ATAAAGGGAA AGTCTCCCTG	7920
TTTTTTATCT TTCTTGTCAG GCCATTTATT CAAAAAGTCA GGGGGCACTA TACCTTTTGG	7980
AATTTTAAAT ACTGGTAAAC GTTCATCTTT AACAACTTCA TCGCCAACAA TTAATTCATC	8040
AATAGCAACC TTCTTTTCAT CATCCCTTGA CGGCCTAAAC ACACCATACC TCAGATATAT	8100
TGGTGCTTCA TCCCAACGTT TATCGCTTAA AATATATGGC CCATTATATT GCTTTAAGGC	8160
ACTTTCTAAC CTTTGCAAAA CCGACTCTAA TTCATTTTGA TTTGGATAAC ATGTAATAAA	8220
TTTACCAGAA AATCCTCGAC TAACCAATTT CCCGTTTCGC ATGATAAATT TGTCTTCTGT	8280
ACTAAGATGT TTAAATGGAA TTCGCATTTT ATGGCAAATT TTTGCTACAT CTTGTAACAA	8340
TTCATGTGAA CTGTTATACT CTGAACTAAT GTGTATTTTC CACCCTTGTC TTTCAACAA	8400
TTTTCCAATA GGGTATTGAT AAACCCACTC ATCATTATTC ATTACTTCGT GCCAATTAAA	8460
AGGCAGACTT ACTTGGTACT TTATGCTAGT ATCTGTACTA TAATCATTAT TAGTGAAAAA	8520
GAAAGGATGC TCCAATTGA AATTATAATC CATAACAAAA TCTCCAAGAA ATTTTATCAA	8580
ACTTAATATA TCTATAGCTA GACAGACTTA TTAAATAAAA AAGGGAGAAT CCTTTGGATT	8640

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CTCCCCATAT AAGCACTAAC ATTCCAACGT GCACATATTG GAACGACATC CATAACTCCA	8700
GAGAATCTCT AAAGTTTACA ATTTAAATGA ATTAACAATT TTCCCAACTA AAAGCACTCC	8760
AGTTACCGCA ACGATTTGTA CTGAATGTAC TAAATCGCAT TCCATCAACT TCATCTGTTT	8820
CGTCAACTTG AACAGATACT AATTGAAGAT TTAATACTTC TTCTGCCATA GCTAGCTCCT	8880
CCTATTTAAA TTTTGGGAT TAAGTACTTT ATCCACCCTC ATTATACTCT CTCCACCAGT	8940
AAAATGCAAG CAATTATACA ATGTTGTCAC ATAGAAAATA ATGTTTCCGT AACTTTTCAA	9000
AGTAACTTCC ATCTCTCTCC CAAAACCTGA AGTTAGTTT AGAAGTTACC TAAAAATCAG	9060
GTCACCTATT TTA AAAAAGC AGCAAACTAT AAAGTAGTAG GTTCCACACC AAATGTAGTC	9120
CCATACTGCC CCATAAGTCA GATTTATAGC GCACCATACC TAAAAACATC CCAAGTGAAA	9180
CATACAAACA CCAAGCTAGA ATGGTTCTCTG TATGATGTGC TAAGGCAAAT AAAACACTTG	9240
TCAAAGCAAC TCTGATATCT AATTTTCTGA CCAAATTCCA TAAAATTTCT CGATACAGAA	9300
ATTCTTCAAC CATACTCGCA TTGATTAAGA ACAATAAAAA TGAAAACCAA GGAATTTGAT	9360
GTTGAAGGCC AATTAAGTTT GCTTGATTCG TGCTTCCTTG AGCATGAATC AGACTAAAAC	9420
ATAGACTTAT AATCAGTAGG CTAACAAATT CAACACCAAG CCATTTTCATC CTAGATTTCA	9480
TATTGACCTT ATGCGCTTGT TTGCGTTGGC CATACATCCA TAAAAAGAA ATGAGTGACG	9540
AACCATAGAG AATCTGTAGT ATAGTTmACT CACCGATACA AAGAAATTTT AATAAGTATA	9600
GAGrTACCAA TAsGACATTT ACTTGTGGA ATATATAAAC TGGAATTATT CTTTTCATAG	9660
TTACCTCCGA AATAATCTT CATAATCTAA ATCTAATACC TGCACAATCC TTT	9713

(2) INFORMATION FOR SEQ ID NO: 44:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 8657 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 44:

AAAGAAATTG TCAGAGAGTG GCTAGATGAA GTAGCAGAGC GGGCTAAGGA CTATCCAGAG	60
TGGGTGGATG TTTTCGAGCG TTGCTACACC GATACCTTGG ACAATACGGT TGAAATCTTA	120
GAAGATGGTT CAACTTTTGT CTTGACTGGG GATATTCCTG CCATGTGGCT TCGAGATTCTG	180
ACAGCCCAAC TCAGACCCTA CCTTCATGTA GCTAAAAGAG ATGCCCTCCT GCGTCAGACC	240
ATTGCAGGTT TGGTCAAACG TCAGATGACC TTGGTACTCA AGGATCCCTA TGCTAACTCC	300

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TTCAACATTG AGGAGAACTG GAAAGGGCAC CACGAGACTG ACCACACAGA CCTTAACGGC	360
TGGATCTGGG AGCGCAAGTA TGAGGTGGAT TCGCTTTGCT ATCCTTTGCA GTTGGCTTAT	420
CTCCTCTGGA AAGAGACTGG CGAGACTAGT CAGTTTGATG AGATTTTGT CGCAGCGACT	480
AAGGAAATTC TCCATCTGTG GACGGTGGAA CAAGACCACA AGAACTCTCC TTATCGTTTT	540
GTCCGAGATA CGGACCGTAA GGAAGACACC TTGGTAAATG ATGGCTTTGG ACCTGACTTT	600
GCAGTGACAG GTATGACTTG GTCAGCTTTT CGTCCGAGTG ATGACTGTTG CCAGTATAGT	660
TACTTGATTC CGTCAAATAT GTTTGCTGTA GTAGTCTGG GTTATGTGCA AGAAATCTTC	720
GCAGCATTA ACCTAGCTGA TAGCCAGAGT GTTATTGCTG ATGCCAAGCG TCTTCAGGAT	780
GAAATCCAAG AAGGAATCAA AAACCTACGCT TACACCACCA ACAGCAAGGG CGAAAAGATT	840
TACGCTTTTG AAGTGGATGG CCTAGGAAAT GCCAGCATCA TGGATGATCC AAATGTACCA	900
AGTCTACTAG CTGCGCCCTA TCTGGGCTAC TGTTCGGTCG ATGATGAAGT GTATCAAGCT	960
ACTCGTCGTA CCATTTTGAG CTCTGAAAAT CCATACTTCT ACCAAGGAGA ATACGCAAGC	1020
GGTCTCGGCA GTTCTCATAC CTTCTATCGC TATATCTGGC CAATCGCCCT TTCTATCCAA	1080
GGCTTGACAA CAAGAGATAA GGCAGAGAAA AAATTCTTGC TGGATCAGCT GGTGCTGTC	1140
GATGGTGGTA CAGGTGTCAT GCACGAAAGC TTTTATGTAG ATGATCCGAC CCTCTACTCT	1200
CGTGAATGGT TCTCCTGGG TAACATGATG TTCTGTGAGT TGGTCTTGA TTACTTGAT	1260
ATTCGCTAAG GGGCTCGCTT TAGCTCAACC GATTCTTATC AGAATCACAA GTTTACATTT	1320
AAAACGTAA AATTTAAATT TAGAATGAGG TTTTACTTCA TGGAAAATGT TGTGTACAT	1380
ATTATCTCAC ATAGTCACTG GGATCGTGAG TGGTACTTGC CTTTGAAG CCATCGTATG	1440
CAGTTGGTGG AATTGTTGA CAATCTCTTT GATCTCTTG AAAATGACCC TGAGTTCAAG	1500
AGTTTCCACT TGGATGGACA AACTATTGTC CTTGATGACT ACTTACAAAT TCGCCCTGAA	1560
AATCGCGACA AGGTCCAACG CTACATTGAC GAGGGCAAAC TTAAAATTGG TCCCTTTTAC	1620
ATCTTGCAAG ATGACTACTT GATCTCCAGT GAAGCCAATG TCCGCAATAC CTTGATTGGT	1680
CAACAAGAAG CTGCCAATG GGGTAAATCA ACCCAGATTG GCTACTTTCC AGATACCTTT	1740
GGAAATATGG GACAAGCGCC TCAAAATCTT CAAAAATCAG GCATTACGT GCGGCGCTTT	1800
GGTCGTGGTG TGAAGCCGAT TGGATTGAC AACCAAGTCC TTGAAGATGA GCAGTTTACG	1860
TCTCAGTTTT CAGAAATGTA CTGGCAGGGT GTGGATGGTA GTCGTGTTTT AGGTATTCTC	1920
TTTGCCAACT GGTACAGTAA CGGGAATGAA ATTCCAGTTG ACAAAGATGA GGCCTTGACC	1980
TTCTGGAAAC AAAAATGTC AGATGTGCGT GCCTACGCTT CGACCAACCA ATGGTTGATG	2040
ATGAACGGCT GTGACCACCA GCCTGTACAG AAAAATCTGA GCGAAGCCAT TCGTGTGGCA	2100

AATGAACTCT TCCCGGATGT AATCTTTGTT CATAGTTCTT TTGATGAATA TGTTCAGCT	2160
GTAGAAGGTG CGCTTCCTGA ACACTTATCA ACTGTTACAG GCGAGTTGAC CAGTCAGGAA	2220
ACAGATGGCT GGTACACACT TGCCAACACT TCTTCATCCC GCATTTACCT AAAACAAGCC	2280
TTCCAAGAAA ATAGCAACCT CCTAGAGCAA GTGGTAGAAC CCTTGACTAT TATCACTGGT	2340
GGACACAACC ACAAGGACCA GTTGACCTAT GCTTGAAAA CACTTTTGCA GAATGCGCCA	2400
CATGATAGTA TCTGTGGCTG TAGCGTGGAC GAAGTTCACC GCGAGATGGA AACGCGTTT	2460
GCCAAGGTCA ACCAAGTAGG AAACCTTTGTT AAAAGTAACT TGCTCAACGA GTGGAAGGT	2520
AAAATTGCTA CGGATAAGGC TCAAAGTGAC TATCTCTTA CTGTCATTAA CACAGGCTTG	2580
CATGATAAGG TCGATACTGT CAGCACAGTG ATTGATGTGG CGACTTGTGA TTTCAAGGAA	2640
TTGCACCCAA CAGAAGGCTA CAAAAAGATG GCTGCTCTTA TCTTGCCAAG TTACCGTGTG	2700
GAGGACTTGG ATGGTCGTCC TGTAGAGGCT ACAATCGAAG ACCTCGGAGC TAATTTTGAG	2760
TATAATTTAC CAAAAGACAA GTTCCGCCAA GCTCGTATTG CTCGTCAAGT GCGCGTGACC	2820
ATTCCAGTTC ACCTAGCGCC GCTTTCTTGG ACAACCTTCC AATTGCTGGA AGGAAAACAA	2880
GAACACCGTG AGGGTATTTA CCAAACGGA GTGATTGATA CACCATTCTG AACGGTGAGT	2940
GTGGATGACA ACATCACAGT CTATGACAAG ACAACTCACG AAGCCTATGA AGACTTTATC	3000
CGCTTTGAAG ACCGTGGGGA CATCGGAAAC GAGTATATCT ATTTCCAACC AAAAGGAACA	3060
GAGCCAATCT TTGCAGAGCT TAAGGGCCAC GAGGTCTTGG AAAACACAGC TTGCTATGCT	3120
AAAATCTTGC TCAAACATGA ATTGACCGTG CCTGTCAAGT CGGATGAAAA GCTAGAAGAA	3180
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AACATTCTCT TGGAACATGA GTTGACTGTC TTCGTTGACA ATCCACAAAT CCGCTTCAAG	3300
ACTCGCTTTA CTAACACTGC CAAGGATCAC CGTATCCGTC TCTTGGTCAA GACTCATAAC	3360
ACGCGTCCAA GCAATGATTC TGAAAGTATC TATGAGGTGG TGACACGACC AAACAAACCA	3420
GCTGCTTCAT GGGAAAACCC TGAAAATCCT CAACACCAAC AAGCTTTTGT CAGTCTGTAT	3480
GACGATGAAA AAGGGGTGAC TGTATCCAAC AAGGGATTGA ATGAATACGA AATCCTTGGG	3540
GATAACACCA TTGCCGTGAC CATTTTGGCT GCATCAGGTG AGCTAGGTGA CTGGGGCTAC	3600
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CACCAAGCCC AAGAACGCTT CTCAGCCTAT CGTCGTGCCA AAGCCTTGCA GACACCGTTT	3720
ACCAGCCTTC AGCTTGCTAG ACAGGAAGGA AGCGTGGTTG CGACTGGTAG CCTCTTGAGC	3780
CATTCTGTTC TCAGCATACC GCAAGTTTGT CCAACAGCCT TTAAGGTAGC TGAAAATGAA	3840

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GAAGGCTATG TGCTTCGTTA CTACAATATG TGTAGTGAAA ATGTACGTGT GCCAGAAAGT	3900
CAACATCTCT TCCTTGACCT ACTTGAACGA CCATACCCAG TTCATTCAGG ACTATTGGCT	3960
CCACAAGAGA TTCGTACAGA ATTCATCAAA AAAGAAGAAA TTTAATTTCA AAAAGTAAAC	4020
ATCAAAAGAA AGGAGGGGCG AAAAAGTAAG AACTAACTGC TGATTGCGCC CTTTATGGT	4080
AAAAACAATG ACCATTGCAA CGATTGATAT CGGAGGGACT GGGATTAAGT TTGCCAGTCT	4140
GACTCCTGAT GGGAAAATAC TGGATAAGAC AAGTATTTC ACGCCTGAAA ACTTGGAGGA	4200
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CGTTCAGGT GCAGTCAATC AAGAGACAGG TGTGATTGAT GGCTTCAGTG CGGTGCCCTA	4320
CATCCATGGC TTTTCTTGGT ATGAGGCGCT TAGCTCTTAT CAGCTACCTG TCCATTTAGA	4380
AAATGATGCC AACTGCGTTG GACTCAGTGA ACTACTAGCT CATCCAGAGC TTGAAAATGC	4440
AGCCTGTGTC GTGATTGGGA CAGGGATTGG CGGAGCCATG ATTATCAATG GTAGACTTCA	4500
TCGAGGTCGC CACGGTCTGG GTGGAGAATT TGGCTACATG ACAACCCTTG CCCCTGCTGA	4560
AAAACCTAAT AACTGGTCGC AACTAGCATC AACTGGGAAT ATGGTACGAT ACGTGATTGA	4620
AAAATCTGGT CATACTGATT GGGACGGTCG CAAGATTAC CAAGAGGCCG CAGCTGGTAA	4680
TATCCTTTGT CAAGAAGCCA TTGAGCGCAT GAACCGAAT CTGGCGCAAG GCTTGCTCAA	4740
TATCCAGTAT CTGATCGATC CAGGTGTCAT CAGTCTGGGT GGCTCTATCA GTCAAAATCC	4800
AGATTTTATC CAAGGTGTCA AGAAGGCTGT TGAAGACTTT GTCGATGCCT ACGAAGAATA	4860
CACGGTCGCA CCAGTTATCC AGGCCTGCAC CTATCACGCA GATGCCAATC TCTACGGTGC	4920
TCTTGTC AAC TGGCTACAGG AGGAAAAGCA ATGGTAAGAT TTACAGGACT TAGTCTCAAA	4980
CAAACGCAAG CTATTGAGGT TTAAAAGGT CACATTTCTC TACCAGATGT GGAAGTGGCT	5040
GCTCACTCAGT CTGACCAAGC ATCTATCTCT ATCGAGGGTG AGGAAGGTCA CTATCAATTG	5100
ACCTACCGCA AACCTCACCA ACTTTATCGT GCCTTGTCCT TGTGGTAAC AGTTCTAGCA	5160
GAAGCTGATA AAGTAGAGAT TGAGGAACAA GCAGCTTACG AAGATTGGC TTACATGGTT	5220
GACTGTCTC GAAATGCGGT GCTGAATGTG GCTTCTGCCA AGCAGATGAT TGAGATATTG	5280
GCTCTCATGG GCTACTCAAC CTTTGAGCTT TACATGGAAG AACTTACCA GATTGAAGGG	5340
CAGCCTTACT TTGGCTATTT CCGTGGAGCT TATTCAGCAG AGGAGTTGCA GGAAATCGAA	5400
GCCTATGCCC AACAGTTTGA CGTGACCTTT GTACCATGCA TCCAGACCTT GGCCCACTTG	5460
TCGGCCTTTG TCAAATGGGG TGTCAAGGAA GTGCAGGAGC TCCGTGATGT AGAGGACATT	5520
CTTCTCATTG GCGAAGAAAA GGTTTATGAC TTGATTGATG GCATGTTTGC CACGTTGTCT	5580
AAACTGAAGA CTCGCAAGGT CAATATCGGG ATGGACGAAG CCCACTTGGT TGGTTTGGGA	5640

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CGCTACCTGA TTCTGAACGG TGTGTGGAT CGTAGTCTCC TCATGTGCCA ACACTTGGAG	5700
CGCGTGCTGG ATATTGCTGA CAAATATGGT TTCCACTGCC AGATGTGGAG TGATATGTTT	5760
TTCAAACCTCA TGTCAGCGGA TGGCCAGTAC GACCGTGATG TGGAAATTCC AGAGGAAACT	5820
CGTGTCTACC TAGACCGTCT CAAAGACCGT GTGACTCTGG TTTACTGGGA TTATTATCAG	5880
GATAGCGAGG AAAAATACAA CCGTAATTTC CGCAATCATC ACAAGATTAG CCATGACCTT	5940
GCATTTGACG GGGGAGCTTG GAAGTGGATT GGCTTTACAC CTCACAACCA TTTTAGCCGT	6000
CTAGTGGCTA TCGAGGCTAA TAAAGCCTGC CGTGCCAATC AGATTAAAGA AGTCATCGTA	6060
ACGGGTTGGG GAGACAATGG TGGTGAAACT GCCCAGTTCT CTATCCTACC AAGCTTGCAA	6120
ATCTGGGCAG AACTCAGCTA TCGCAATGAC CTAGATGGTT TGTCTGCGCA CTTCAAGACC	6180
AATACTGGTC TAACGGTTGA GGATTTTATG CAGATTGACC TTGCCAACCT CTTACCAGAC	6240
CTACCAGGCA ATCTCAGCGG TATCAATCCC AACCGCTATG TTTTATCA GGATATTCTT	6300
TGTCCGATTC TTGATCAACA CATGACACCT GAACAGGACA AACCACACTT CGCTCAGGCT	6360
GCTGAGACGC TTGCTAACAT TAAAGAAAAA GCTGGAAACT ATGCCTATCT CTTTGAACT	6420
CAGGCCCAGT TGAATGCTAT TTTAAGTAGC AAAGTAGATG TGGGACGACG CATTTCGTCAG	6480
GCCTACCAAG CGGATGATAA AGAAAGTTTA CAACAAATCG CCAGACAAGA ATTACCAGAA	6540
CTTAGAAGCC AAATTGAAGA CTTCCATGCC CTCTTTAGCC ACCAATGGCT GAAAGAAAAC	6600
AAGGTCTTTG GTTTGGATAC AGTTGACATC CGTATGGGCG GACTCTTGCA ACGCATCAAA	6660
CGAGCAGAAA GCCGTATCGA GGTTCATCTG GCTGGTCAGC TTGACCGCAT CGACGAGCTG	6720
GAAGTTGAAA TCCTACCATT TACTGACTTC TACGCAGACA AGGATTTTCG AGCAACTACA	6780
GCCAACCAGT GGCATACCAT TGCGACAGCG TCGACGATTT ATACGACTTA ATATTCTTCG	6840
AAAATCTCTT CAAACCACGT CAGCTTCCAT CTGCAACCTC AAAACAGTGT TTTGAGCAAC	6900
CTGCAGCTAG CTTCTAGTT TGCTCTTTGA TTTTCATTGA GTATAAAAAC AAGAACACCT	6960
TGCTTGGCGC AGGGTGTTC GCGTGAAACA GAAGAATTAT CTGGTTTCAA ATGCTACAGT	7020
TAGACAACT TATGATAAAA TAGCAGAAAG TGAATGTTTC CTAAGAGCAA TTGGAGGTAT	7080
TATGCTACAC TTAATAATTAG TAAACAAGA AATAGAAGCT GAAAAGCCAG CATCTGTAGA	7140
AGCTTGGATC ATTTCCGTCA AATTTAAAAA AGGTGCTAC CGACATATAT AGATTCCAAA	7200
AACAAAAACG TTAGCGGAAC TAGCAGATGT GATTTTATGG AGTTTGTATT TTGCAATGA	7260
TCATGCTCAC GCATTTTCA TGGATAATGT TGAGTGGAGT CATGCAGATT CTTACTTTCG	7320
TAGCTTTGTT AGTGACGATG TTGAAGAAGC TTACACAGAA AATGTCTATC TGGATAGCCT	7380

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AAGTGTCAAA CAAAAATTTA AGTTTATTTT CGACTTCGGT GATGAATGGC GTTTTGAATG	7440
CCAAGTGCTG AGAGAAATCG AGACAGAGGA CGAAGAAGCT TATCTCGTAC GTTCGGTTGG	7500
AACGTCGCCA GAACAATATC CAGATTATGA TGGTTTGTAC TATGAAGAAT GGTA AAAATG	7560
AAATCAGTCT GTGTAGGCTT AGTATTTCAA TAGACTTCCT GCAAAACTAG AATCCTAGTT	7620
CATGATTGAT AATACCAGCA ATCAAATTCA TTCGTAATCC GAAGCGTTTA CGATGATTTC	7680
GATAGGTTGT TGAAAACATT TTAAACGTTT TTACTTTGGC AAAGATGTTT TCAACCTTGC	7740
TTCTCTCCTT AGATAGCGCA TGGTTATAGG CTTTATCTTC AGCTGTTAGT GGCTTGAGTT	7800
TGCTGGATTT ACGTGAAGTT TGTGCTTGAG GACATATCTT CATGAGCCCT TGATAACCAC	7860
TGTCAGCCAA GATTTTACCA GCTTGTCGGA TATTTCTGCA ACTCATTTTG AACAACTTCA	7920
TATCATGACA ATAGTTCACA GTGATATCCA AAGAAACAAT TCTCCCTTGA CTTGTGACAA	7980
TCGCTTGAGC CTTCATAGCG TGAAATTTCT TTTTACCAGA ATCATTCGCT AATTCTTTTT	8040
TTAGGGCGAT TGATTTTAC TTCCGTCGCA TCAATCATTA CCGTGTCTC AGAACTAAGA	8100
GGAGTTCTTG AAATCGTAAC ACCACTTTGA ACAAGAGTTA CTTCAACCCA TTGGCTCCGA	8160
CGGATTAAGT TGCTTTCGTG AATACCAAAA TCAGCCGCAA TTTCTTCATA AGTGCGGTAT	8220
TCTAGGCTTA ATTTAGGTTT TCGTCCACCT TTTGCGTGT TAAGTTGATA AGCTGTTTTT	8280
AATACAGCTA ACATCTCTTT AAAAGTCGTG CGCTGAACAC CAACAAGACG CTTAAATCGT	8340
GTATCAGTTA ATTGTTTACT TGCTTCATAA TTTTCGAGG AGTCTATTGA CTCTTTGGTA	8400
GGTGTCAATG TTTTTCAT CTATCCGAG AATTATTTTC CCGCCATTG TATTTGCAAA	8460
TGCTGAGTAG GTTTCCAGA AAGACTCTGG AAGATGTTT TTAGCTTTT TGTATTCTAA	8520
ATCAACCCCT TCAAATTTA AGTCCATATT TTTCTTTAC ATCTGTTTT TGTGGTTCTG	8580
GTATTTGTTT AAGTTGAGTG ATAATATAGC GAATTGAATT TCGAGAGTTT TTACTCAGTT	8640
AATTTCTTTT TTAACCC	8657

(2) INFORMATION FOR SEQ ID NO: 45:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11384 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 45:

TCTATTTTGG GTATAGACTT ACCTATAAAG AAAAATATCT ATACACTGCC TTACTAGCTA	60
TACTGAACGA GTCAACAAAA ACGATATATA TTGATGATAT AAATACAGCA AGATTTTTTA	120

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ACTTCTTTGG CAATGATATT CCTAATTCGT CTTTAAAAA AATTGACTAT ATCGCACCTT	180
CAGAAATTGT TTCATTTAGT ACGTACGTTT GACAACGTTT TAAAGTAATT CCTAAAATTT	240
TGGAACATAT ATTAAATCA AGTTTTTTAT TAGAGAATAT AGATGTTTCT GGTACACTG	300
TAAATATTTT AGAAGATCAA TTAACAAAAC ATAGAACAAT CAAAATTAGT AAAAATAAC	360
TGGTTGATCT CATGTATAAA TACCTAACAA AACCACGCGC CTTGCCTGCT GATGGAAGA	420
AAGGTACAAA TACATGAATA TCAAAGAAAA AATCAAAAAG AATGGCCAAA GAGTTTATTA	480
TGCTAGTGT TATCTAGGCG TTGACCAACT AACGGGCAAA AAAGCCCGTA CAACTGTTAC	540
AGCAACCACT AAAAAGGCG TTAAGTAAA AGCGCGTGAT GCGATCAATA CTTTGTCTGC	600
TAATGGCTAT ACAGTTAAAG ACAAGCCGAC AATTACAACA TATAATGAGC TTGTAAAAGT	660
TTGGTGGGAT AGTTACAAGA ATACAGTTAA GCCAAATACT CGCCAATCCA TGGAGGGATT	720
GGTTAGAGTG CATTTATTGC CTGTATTTGG CGATTACAAG CTATCTAAAC TTACTACGCC	780
TATTCTTCAA CAGCAAGTAA ACAATGGGC TGACAAGGCA AATAAAGGCG AAAAAGGGC	840
ATTTGCTAAC TACTCTTGC TCCATAACAT GAATAAGCGT ATTTTGAAAT ATGGCGTAGC	900
TATCCAGGTA ATACAATACA ACCCAGCTAA TGATGTCATC GTTCCACGCA AACAGCAAAA	960
AGAAAAGGCT GCTGTCAAAT ACTTAGACAA CAAAGAATTA AAACAGTTTC TTGATTATTT	1020
AGATGCTCTG GATCAATCAA ATTATGAGAA CTTATTTGAT GTTGTCTCTG ATAAGACTTT	1080
ATTGGCCACT GGTGCGGTA TTAGTGAGGC TCTGGCTCTT GAATGGTCTG ATATTGACCT	1140
AGAAAGCGGT GTTATCAGCA TCAATAAGAC ACTAAACCGC TATCAGGAAA TAACTCACC	1200
TAAATCAAGC GCTGGTTATC GTGATATACC AATAGACAAA GCCACATTAC TTTTACTGAA	1260
ACAATACAAA AACCGTCAAC AAATTCAGTC TTGGAAATTA GGCCGATCTG AAACAGTTGT	1320
ATTCTCTGTA TTTACGGAGA AATATGCTTA TGCTTGTAAC TTACGCAAAC GCCTAAATAA	1380
GCATTTTGAT GCTGCTGGAG TAACTAACGT ATCATTTCAT GGTTCGCC ATACACATAC	1440
TACTATGATG CTCTATGCTC AGGTAGCCC GAAAGATGTT CAGTATAGAT TAGGCCACTC	1500
TAATTTAATG ATCACTGAAA ATACTTACTG GCATACTAAC CAAGAGAATG CAAAAAAGC	1560
CGTCTCAAAT TATGAAACAG CTATCAACAA TTTATAAAAA ATAAGGGTGA CCCATTCCG	1620
GGCTACCCTC TTACTATACC AAAAATTAGT AGGGGTAGTA AAAAGGGTAT TAAATTATAA	1680
AAAGCACTAA GGGAAAGCGC CCCAAAGTGC TTATTTCAAA GGCTTTATAG CCTATAATCA	1740
CATAAAGAGA TTATTTTTTA AGGTGTAGA ATGATTTCAA TCCACGATAT TCAGCTACTT	1800
CACCAAGTTG GTCTTCGATA CGAAGCAATT GGTGTATTT AGCGATGCGG TCTGTACGTG	1860

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AAAGTGAACC AGTCTTGATT TGTCTGCGT TAGTTGCAAC TGCAATATCA GCGATTGTTG	1920
AATCTTCAGT TTCACCTGAA CGGTGTGATA CAACAGCAGT GTAACCAGCT TCTTTAGCCA	1980
TTTCGATAGC TTCAAAAGTT TCAGTAAGAG TACCGATTTG GTTAACTTTG ATAAGGATTG	2040
AGTTAGCAGC ACCTTCTTGG ATACCACGTG CAAGGTAGTC AGTGTTTGTG ACGAAGAAGT	2100
CGTCACCAAC AAGTTGTACT TTCTTACCAA GACGTTCACT AAGAGCTTTC CAACCATCCC	2160
AGTCGTTTTT ATCCATACCA TCTTCAATAG TGATGATTGG GTATTTGTTA ACCAATTCTT	2220
CAAGGTAGTC GATTTGTTCT GCAGATGTAC GAACAGCAGC ACCTTCACCT TCAAAATTAG	2280
TGTAGTCGTA AACTTTACGT TCTTTATCGT AGAATTCTGA TGAAGCACAG TCAAAATCCGA	2340
TAAATACGTC TTTACCTGGT ACATATCCAG CAGCTTCAAT CGCAGCAAGG ATAGTTTCAA	2400
CACCATCTTC AGTTCCTTCG AAACGAGGAG CGAATCCACC TTCGTCACCT ACGGCAGTTT	2460
CCAAACCACG TGATTTAAGG ATTTTCTTAA GAGCGTGGAA GATTTACGCA CCGTAACGAA	2520
GGGCTTCTTT AAATGTTGGC GCACCAACTG GCAAGATCAT GAACTCTTGG AAAGCGATTG	2580
GAGCGTCAGA GTGAGAACCA CCGTTGATGA TGTTTCATCAT TGGAGTTGGA AGAACTTTAG	2640
TGTTGAATCC ACCAAGATAG CTGTAAAGTG GGATTTCAAG GTAGTCAGCA GCAGCACGAG	2700
CTACAGCGAT AGACACACCG AGGATTGCAT TCGCACCCAA TTTACCTTTG TTAGGAGTAC	2760
CGTCAAGTGC GATCATAGCA CCGTCAATAG CTTGTTGATC ACGTACATCG TAGCCAATGA	2820
TAGCTTCAGC AATGATGTTG TTTACGTTGT CAACAGCTTT TTGTGTACCA AGACCACCGT	2880
AACGAGATTT GTCACCGTCG CGAAGTTCAA CTGCTTCGTG TTCACCAGTA GAAGCTCCTG	2940
ATGGAACCAT ACCACGTCCG AAAGCACCTG ATTCAGTGTA AACTTCTACT TCAAGTGTTG	3000
GGTTACCGCG TGAGTCTAGG ACTTCGCGAG CGTAAACATC AGTAATAATT GACATTTTTT	3060
ACTCTCCTTA TGAGTTAAAT TTTTACACC TCTATAATAC CTAAAAACCC CTCCTTTTTT	3120
AAGAAAAAAC GTTATCTTTG TGCAACTTTT CCTTAACTTT ATAAAGTAAT CGCTTCTTTT	3180
TGTCTGTTTT ATTCTAACTT TTATGATATA CTGTTTTCAT GACAGATTTA TCAAAACAAT	3240
TACTTGAAAA AGCTCATGGT GGGTTAAAAA TAAATCCGGA TGAGCAAAGA CGCTATCTTG	3300
GTACTTTTGA GGAAAGAGTT CTTGGATATG TAGATATTGA CACAGCAAAT AGCCCTCAGT	3360
TAGAAAAAGG CTTTTTATTT ATTTTAGAAA ACCTTCAGGA AAAAGCAGAG CCACTATTTG	3420
TGAAGATTTT ACCAACTATC GAATTTGATA AGCAAGTTTT CTACTTAAAA GAAGCAAAAG	3480
AAACTGATAG TCAAGCCACC ATAGTATCTG AAGAGCATAT TACTTCTCCT TTTGGCCTGG	3540
TTATTCATAG CAATGCACCA GTTCAAGTAG AAGAAAAAGA CCTTCGACTT GCTTTTCCAA	3600
AACTTTGGGA AGTTAAAAAG GAAGAACCAG CCAAAACATC CTTATGGAAG AAATGGTTTA	3660

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GCTAAATCTT GCACATATTT AATAAGTGCC CAATATTGGC AGCCGTGCGC TCCAGATAGA	3720
AAC TGGCATT TTTCAAATA TCTTCTAAAG GTTCACTTTT CTCCAAAATA GAAAAGACAG	3780
CTTGATATTT TTCAAATGGT AGGGGAGGTA AATCTTCAGC AAGACTACCG CAAATAGCAA	3840
TAACAGGAAC TCCAACAGGG GTTCTTTTGT CAACACCTAT AGGCGCTTTC CCAGCAAAGC	3900
TTTGACTATC AAGTCTTCCT TCTCCAACAA CAACCAAGTC AGCATCTGAA ACTTCTTAT	3960
CAAAGTTGAT TAAGTCCAAG CAGGTATCAA TTCCAGACAC GATACTTGCC TGAGCAAAGG	4020
CACACAAACC ACCAGCAAGG CCTCCACCTG CTCCTGCTCC TTTAATTTCT AATGTTGCAG	4080
GTGAGAATTT TTCATAAAAA TCTTGATCG CCTGATCTAC GACTGCAAAC ATAGTCGGAT	4140
GTAGACCTTT TTGATTGCCA AAAGTGTAAG TCGCACCTTG ATGACCACAT AAGGGACTCA	4200
CGACATCTGC TAAATATGA ATTTGAACAC CTTCAAGAA TTTATAGCAA TTTTCTGTTG	4260
AAACAGAAGC TAAGTTTAAT AAGGATTGAC CGGAAGCAGG CAAGACATTT CCATCCCTAT	4320
CATAAAATG ATAACCTAAA CCAGCAGCAA TCCCCAGTCC TCCATCATTA CTGGCCGTGC	4380
CACCAACACC GATATAAATA TCTTTAATCC CTTTAGAGAT GAGATGAAGA ATCAACTCTC	4440
CAATACCACA AGTTTGGATT TGAAGTGGAT TTCGTTTCTC TAGCGGAATT TTTCCAAGAC	4500
CAACCAAGTC AGCTACTTCA AATAGTGCCA GTTCCCTTTT TTGAAAATAG CGCATGGCTT	4560
CTTTTGTGCC AAAAGGTCT GTCACTTGA TCCATTTTTC TTTTAGGTCA AGAGAATGTC	4620
GGATAGCATC TACAGTACCT TCTCCCCAT CACCAACAGG GCAGAGGAGA CATCTACAT	4680
CTGCTATCGA TTGTTGGAAG CCTCTTTTGA TTGCTTCAGC TACCTGTTGA GCTGTCAAGC	4740
TTTCCTTAAA CGAATCCGGT GCAATTACAA TCTTCATATT TTCCCTCATT CTAAACAGTC	4800
AATCAAAGGG AGAACTTCTA AAAAATCCCT CTTGTCAACA TGATGTGGTA TTTCTTTTTT	4860
GAGCACTTCT TTGGCACAAA AGGCGATTCC TAACTTCGCC GACTTCAACA TTAATAGATT	4920
ATTAACCCCA TCACCGATTG CCACCGTTCT TTCTTTAGAA AGTTTTAGTT TCTTCTCCA	4980
TTTTTCCAGA GTCTCTTTTT TGACCTGGGG ACTTATAATT TGTCCAATA ATTTTCTGT	5040
TAAAAGACCT TCTTTGACTT CAAGCTAGTT GGCAGTGAAA TAGGCAATAC CAAGGGATTT	5100
TGCTAATCTC TCCAACATTT GGTGTAAATC CACCAGACAC CAGACCAACT AGGATGCCAT	5160
TCTTTTGGAG AATAGAGATG AACTCTGGGA CATTTAGCGA TAGATGAATT GAGTTGAAGA	5220
CGTTATCAAA GACCAAAAATA GGAAGACCTT CCAACAAGGA CACTCTTTTT CTTAACTGC	5280
TTTCAAAGAC CAACTCTCCT CGCATTGCTC GACTTGTAAT CTGCGAAATT TCCGCCTCAT	5340
GACCTGCCTC TCTCCCTAAA AGATCAATCA CTTCTTCTAG GATTAAGGTT CCATCTACAT	5400

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CCAAAACACA	CAAGCCTTTT	ACTTGAGACA	TCAGTTCTCC	TCTCTAAACA	GCCTAAAAAT	5460
CGTATGAAGT	CATCATACGA	TTTTATCTAT	TAATTAAC TA	AACTATGGTA	CAAGTCAAGG	5520
TATGACTTGC	AGGCTGTATC	CCATGAGAAG	TCAGTCTCCA	TAGCTTGTTT	TTGTAGGTTT	5580
CTCCAAATGT	CTGGATGGTT	TCTATACAAG	TCCAATGCTG	TTTGGAAAGT	CCAATTTAAC	5640
CAATAAGGAG	ATAGATTGTC	AAAGCTAAAG	CCAGTACCGC	TTCTTCGAT	TGGATTGAAA	5700
GCGCGAAGT	TATCTCGCAA	GCCTCCAACT	TCATGGACCA	ATGGCAAGGT	TCCATAACGC	5760
ATAGCCATCA	TTTGAGACAA	GCCACACGGT	TCAAAACGAC	TTGGCATGAG	GAAGAGGTCA	5820
CAAGCAGCGT	AGATTTCCTG	AGCAAGTTTG	ACATCAAAAG	TGATATTTGT	TGATAGCTTG	5880
TCTGGGTAAA	TCTGAGCAA	CCATGAGAAA	GCTCCTTCAA	AGGCTGGATC	GCCAGTTCCC	5940
AAAAGAACAA	TCTGAACATC	TTCTTGCAAG	ATATGGTGAA	GACTTTCGAC	CACCACATCA	6000
AAACCTTTTT	GACGTGTCAA	ACGAGAAACA	ATCCCACCA	GTGGAACGTC	TGCTCTAACA	6060
GGCAAGCCAA	CTCTTCTTG	CAATTTTGCC	TTATTTTGG	CTTCCCAGA	CAAATCTTCC	6120
TGATTGAAAT	GATAGTCTAA	AAGAGCATCC	GTCTGAGGAT	TATAAAGATC	AGCATCAATC	6180
CCATTACGGA	TACCAGATAC	TTTACCAGAC	TCCATTTTAA	GAATCTGATC	CAAATTACAT	6240
CCAAACTGAC	TAGTCATAAT	TTCATGAGCA	TAGCTAGGTG	AAACGGTTGA	AACACGGTTC	6300
GCATAGAGAA	TACCTGCCTT	CATCCAGTTC	AGACAGTTGT	TCCATCGAAG	GGTGCCATCA	6360
GCGTAACGTT	CAAAGCCAAC	TCCAAACAAA	TCACCCAACA	TTCTTCTGA	AAATTGTCTT	6420
TGGAATTCTA	AATTATGAAT	GGTTAAAACT	GTTTCAATGT	CCTCATAGGC	TTGAATCCAA	6480
CGGTATTTTT	CCTTCAACAA	GAAAGGAATC	ATAGCTGTAT	GGTAGTCATG	AACATGGAGA	6540
AGATCAGGAA	TAAAGTCAAT	CCTTTCCATA	GCCTCAATGG	CAGCCAGTTG	GAAAAAGGCA	6600
AAGCGTTCTC	CGTCATCAAA	ATCACC GTAA	ACATGACCAC	GGAAGAAATA	ATATTGATTG	6660
TCAATAAAGT	AGAAGGTTAC	ACCATTTAAT	ACTGTTTTCT	TAATTCCACA	ATACTGTCTG	6720
CGCCAACCAA	CGCTCACCTC	AAAATGAAGC	ACATCTTCAA	TCTGATTTCC	AAATTTAGCC	6780
TCTACCATAT	CATAGTAGGG	TAAAATCACT	GCAACTTCGT	GCCCAGCTTT	TACCAGTGAT	6840
TTTGGAAGAG	CGCCAATGAC	GTCTCCCAA	CCACCTGTTT	TTGAAAAGGG	TGCACCCTCT	6900
GCTGCTACAA	ATAAAATTTT	CATGAATGAA	TATCCTCTGT	TACTTTAGCA	CCTTTCTTAA	6960
CCACAAC TGG	ATGTTCTGCA	GTTCCTCGAA	TCACAACACC	ATGCTCAACT	TCAACCCCTT	7020
TGTCCAAGAT	AGCATATTCG	ACCTGAGCCC	CTTCTCCAAT	AACAACACGA	GGGAAGAGCA	7080
GGCTATCTTT	AACCAAGCTA	TCCTTATGGA	CATGAATATT	ACGTGATAGA	ACAGAATTAG	7140
CTACTTGACC	TTCAATAATA	CTACCAGAGG	CAAACTGAGA	AGTGCTTACC	TTAGATGTAT	7200

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TAGCATAGTA AGTTGGCTCT TCGTTTTTGA CCTTTGTATA AATCTTTTGG TTTGGTGAGA	7260
AAAGAGAATA GAATTTTGTG GATTCAAGCA TATCGATATT CGCTTGATAA TAAGATTAA	7320
CAGAGTGAAT ATTGGCTAGA TAGCCCGTGT ACTCGTAGGC GAAAGCTCCC TCTTTTACAG	7380
CCAAATCCCG TAAAACATAG CGCAATTCT CTGGATGTTT TTTTTTAGCT TCTTCTTCCA	7440
AGTGTTCAT CAACCAAGGT GTATCAACGA CAAAGATATC TGTAGACATA TTGAACGTTT	7500
CAGCTGTTGA CTGCTATCA AAGAGTTTAT GAGAAAGAAC ATGGTCTGTT TCATCTACAT	7560
CCAAGATGC ATTTACTTCT GAAATATCTT TCTTAGCTAG TTTTTTATAA ACTACAGTGA	7620
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GTGGTAGTA TTCTTTTCCA ACTGTACTAC TTTCTACACG GGTATTGTAA ATTCCTAGAT	7800
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CTGAGCTGAT ATTATCCTGC TGGAAAATAC CAAAGACACT ACGAACACCT GCATTAGCAA	7920
GGCTTGAAAG TGGGAAGTCA ATCAAACGAT ATTTCCACCC AAATGGCAA CTTGCTACTG	7980
GACGGTGGTC CGTCAATGTC GACATATTGT GAAAACCAAC TGTATTTCCT AAAATGGCAG	8040
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ACTTCATCTG TTCCATCAAT TTCGACACCG TCAGAAATAA TCGCACCTTC ACCAATAATG	8160
GCACGTTTAA TCTTAGCTCC TTGACCAATG ATAGCTCCAC TCATGATAAC TGAATCAAGG	8220
ACTTCCGCTC CTTGCGGAAC TTGCGCGCCT GTTGAAAGGA TAGAATGTTT AACAGTTCCA	8280
TCAACGAAAC ATCCGTCTAC AACTAATGAG TCTTCCACAT GAGCATTGTC CCCGAGGAAG	8340
TTTGGTGGTG AAATCAAGTT TCTTGAGTAA ATCTTCCATT GACGGTTACG ACTATCCAAG	8400
GCATTTTCTG GAGAAATATA CTCCATGTTT GCTTCCCAA GTGACTCAAT AGTACCAACA	8460
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ATATTACGAA GCGTTGCCA ATCAAAAATG TAGATTCCCA TAGAAGCTTT TGTAGATTTA	8640
GGTTGAGCTG GTTTTCTTTC AAATTCACA ATACGATTGT TAGCATCTGT GTTCATGATA	8700
CCAAAACGGC TTGCTTCTTT AAGAGGGACG TCTAAACTG CTAAGTCAA GCTGGCATTA	8760
TTATCCTTAT GAGACTGGAG CATATCATCA TAGTCCATTT TGTAGATGTG ATCCCGAGC	8820
AAAATCAAGA CATACTCAGG ATTGACACTG TCGATATAGT CGATATTTTG GTAAATAGCG	8880
TGACTAGTCC CCTCAAACCA ACGATTTCCT TCACTTGCAG AATAAGGTTG AAGAATAGAG	8940

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ACACCTGAAT TAATACCGTC TAGTCCCCAG CTTGAACCAT TCCCAATATG GTTGTGAGA	9000
GCAAGTGGTT GATACTGTGT AACGACCCCA ACATTGTGAA TCCCTGAGTT GGCACAGTTT	9060
GATAGGGCAA AGTCAATGAT ACGGTAGCGC CCACCAAATT GCACAGCTGG TTTTGCGATG	9120
CTTTGAGTGA GTTTACCGAG ACGAGTTCCT TGCCCACCAG CAAGAATCAA AGCTAACATT	9180
TCATTTTTCA TTTTCTACTC CTTTTTGGTT TTTATTGTG ACGGTTTTAG TAGATTTCAA	9240
GCGACGTTTG ATTTTCCATA CACTTGCTCC CATAGCCGGT AGGGTAAAGG TTAAGGTCTG	9300
CTCATAATCT TTCCATAGTC CTTCTTGCGT TTGAACAGTT TGATTATGTT CTTTCCAAAC	9360
GCCTCCCCAC TCTTCCAACT CAGTATTCCA TACTTCTTCG TAAATTCCTG CAACGGGTAG	9420
TCCGATTGTA AAATCTTTCC GCTCAACAGG TACCATATTA AAGATACAGA CTAACATTTT	9480
TCCCTTTTTA CCCTTACGAA TAAAGGAAAG AACACTCTGG TCTCGATTAT CCGCATCAAT	9540
GATTTCAATA CCATCATAGC TGGTATCAAT TTCCACAGA CAGCGATGAT CTTTGTAATA	9600
CTGGTTTAGC TGAGAAGCGA AATACTTCAT CTTAGCATT CATTGGGTCTT CTAGGTTAGA	9660
CCATTCCAAC TGTCTTCAG ATTTCCATTC TAGGAATTGA CCGTATTCGC TACCCATGAA	9720
GAGCAATTTT TTACCAGGGT GACAAATTTG GTACGTATAG AGATTGCGCA AGCCTGCGAA	9780
TTGATTGTAA CGATCTCCCC ACATCTTATG CATCATACTC TTCTTGCCAT GAACCACTTC	9840
ATCGTGCGAG AATGGCAAGA GATAATTCTC CTTGAAAACA TACATAAAGC TGAAAGTCAC	9900
CAGGTTAAAG TCATATTTAC GATAGATCGG ATCTTCTTCG TAGAAACGGA GGATATCATT	9960
CATCCAGCCC ATGTTCCATT TGTAAGTCAA TCCTAGACCA CCAATCTCTT TCATTCCCGT	10020
AATCTTGATC GCAGACGAAC TTTCTTCTGC AATCATCATC ACATCTGGAT ATTCTAAGTT	10080
AATAACCTCA TTCAAGCGCT GAAGGAAATA ATAACCTTCA TAGTTGAGAT TTCCGCCATC	10140
TTTATTAGGT GTCCATGGAG CATCATCATA GTCCAAATAG AGCATGTTGC TAACAGCATC	10200
CACACGAATA CCATCCAAAT GATAGACATC AATCCAATGC TTAATGCAAG AAATTAAGAA	10260
GGACTGGACT TCATTTTTTC CAAGGTCAA ATTAAGGGCA CCCCAACCAT GGTATGAGC	10320
CTTATTATGG TCTTGGTATT CAAAAGTCGG TGTCCCATCA TAATAGGCTA AGGCATCATC	10380
GTTGATGGTA AAGTGACTGG TACCCAGTCC ACAATAACCC CAATATTATG GGTATGACAC	10440
TCCTCGACAA AATCTTGAAA CTCCTCTGGT CGGCCATAAG CATGCTCTAA AGCGAAGTAA	10500
CCCATAAGCT GATACCCCA ACTCAAGCCC AAAGGATGGG ACATCAAGGG CATAAACTCA	10560
ATATGAGTAT AGTTCATTTT AACGAGATAA GGAATGAGTT CATCCTTGAG CTGGGCAAAA	10620
CTATAAGGAC TGCCATCAGA ATTTCTTTTC CATGATCCAG CGTGAAGTTC ATAAATATTG	10680
ACAGGACGCT CTTCAAAGCC CCAACGTTTT CTTCGTGCCA GCCAAAGTCC ATCCTTCCAT	10740

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TTCTTCTCAG GAAGCTCTGT TACGATTGCC CCTGTTCCCTG GACGAGCCTC ATACCTGACA	10800
GCAAAAGGGT CAATCTTCAT CAGTTGATGA CCATTTTGAC GTGTGACATG ATATTGTAA	10860
ATATGCCCTT CTTGAGCCAT ATTGGTAAAG ACTTCCCAGA CCCCAAAATC ATTTCTTACC	10920
ATTGGAATCT GATTTTCAAT CCAGTTGGTA AAATCACCAA CCAAGTGAAC AGCCTGAGCA	10980
TTAGGTGCCC AAACACGGAA GGTATAGCCA TGCTCTCCAT TTAGTTCCTC CCTATGTGCT	11040
CCTAGATAAT GTTGGAGATA AAAATTTTCA CCCGTCATAA AGGTTTTTAA TGCTTCTCTA	11100
TTATCCATAT ACTCCCCTTC TCCTGTAAGC GTTTTCTATG TTTTATTAT ACTACCTTTT	11160
TAGAGAAGAT TCAAGTAAAT TACTATACTT CTTTAATTAT TTTGAAAATC TACAACAAGT	11220
TCACTTACTC GTTCAATTGT AAATCAATAT TTTTCAAAA AATGCGAAA ACGCCTTCT	11280
TTTTCTACTA TAGTGAAATG AAATAAAACA TGCGCAAATC GATTAAGGAA TTTAATCTAA	11340
TTTCTAACAA TGTCTTAGAA ATCAAAGTGT ACTATTTTAA CTCC	11384

(2) INFORMATION FOR SEQ ID NO: 46:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 7577 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 46:

TGTTGATTTG TTAGTAGACG TTGACCAACG TCCTTCGGCT GGAAAAGGAA TTCTCCTTAG	60
TTTCCAACAC GTTTTCGCCA TGTTTGGTGC GACCATCTTG GTACCATGTA TTTTGGGAAT	120
GCCTGTATCT GTTGCCCTTT TTGCTTCAGG TGTGGAACA CTCATCTACA TGATTGCTAC	180
TGGTTTTAAA GTTCCAGTTT ATCTAGGTTT TTCATTTGCC TTTATCACAG CTATGTCACT	240
GGCTATGAAA GAAATGGGGG GGGATGTATC TGCTGCCCAA ACAGGGGTTA TCTTGACTGG	300
TTTGGTCTAT GTCCTTGTG CTACCAGCAT CCGATTGTGA GGAACAAAAT GGATTGATAA	360
ACTCTTGCCA CCAATCATTA TCGGTCCTAT GATCATCGTT ATCGGTCTTG GACTTGCAGG	420
TTTCACTGTT ACCAATGCAG GTCTTGTAGC AGACGGAAT TGGAAAAATG CTCTGGTAGC	480
CGTTGTTACT TTCCTAATTG CTGCCTTTAT CAATACAAAA GGAAAAGGCT TCCTACGAAT	540
CATTCCATTC CTCTTTGCCA TTATCGGTGG TTACCTTTTC GCACTAACTC TTGGCTTGGT	600
TGACTTTACA CCAGTTCTTA AAGCCAACTG GTTCGAAATT CCTGGTTTCT ACTTGCCATT	660
TAGCACAGGT GGTGCCTTTA AAGAGTACAA TCTTTACTTT GGTCCAGAAG CCATCGCTAT	720

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CTTGCCAATC GCTATCGTAA CAATTTCTGA ACATATCGGA GACCATACTG TTTTGGGTCA	780
AATCTGTGGT CGTCAATTCT TAAAAGAACC AGGTCTTCAC CGTACTCTTC TTGGTGACGG	840
TATCGCAACT TCTGTTTCTG CCTTCCTTGG TGGACCAGCC AATACAACCTT ACGGAGAAAA	900
TACAGGGGTT ATCGGTATGA CTCGTATCGC TTCTGTCTCA GTTATCCGTA ACGCTGCCTT	960
CATCGCGATT GCCCTCAGCT TCCTTGGTAA ATTCACTGCC TTGATTTCAT CTATTCCAAA	1020
CGCTGTACTT GGTGGTATGT CAATCCTTCT CTATGGGGTT ATCGCCAGCA ATGGTTTGAA	1080
AGTCTTGATT AAAGAACGTG TTGATTTCGC TCAATGCGA AACCTCATCA TCGCAAGTGC	1140
TATGTTGGTT CTGGACTTG GAGGAGCTAT CCTTAAACTT GGTCCAGTTA CACTTTCAGG	1200
TACTGCCCTT TCAGCCATGA CAGGAATCAT CTTGAACTTG ATCTTGCCAT ACGAAAATAA	1260
AGACTAAGAG TCTAAATACA CCTAATCCAC TCAGACAGCT GAGTGGATTT TTCGTATACC	1320
ATAATAAAG TGTCTTAACA AAATTATTAA AATCAAAAAA CGTATAATAT CAGATATCTT	1380
AAAACCTTGA TACTGTACGT TTTATCATAG AAATTTTAC TTTATTTTCT CATCAAATGA	1440
GATTTGCATC AATCTCTGT CTTACTTGC TTTCTTCTC GCTTCTTCA TTTGTTAGC	1500
CATACGTTTC ATGGACTGTT TCATGGCAA TTCACCAATT TTACCTTTCA AACCGCCACC	1560
AAACATCTGG CTCATATCTG GCATTCCTGC TCCTCCGAGA GCTGATAAGT CAGGCATACC	1620
GCCTTGTCCT ATCATTCCTT CAAGGGCAGA CATATCCATT CCTCCCATAT TTGGCATATT	1680
TTTAGGAAGG TTATTTGGAT TAATCCCCAT TTGCTTCATC ATTTTATFCA TATCCCAGA	1740
CATAACACCC TGCATGAGCT GTTTAGCCTG GTTAAAGTCC TTGATGAATT TATTGACTTC	1800
GACGAATGTA TTTCCAGAAC CAGCAGCAAT ACGACGGCGA CGGCTTGGAT TTAACAAATC	1860
TGGGTTTTCG CGCTCTTCAG GTGTCATCGA AGACACAATG GCACGTTTAC GAGCAATCTG	1920
GCGTTCATCC ACCTTCATGT TTTGAAGGGC TGGATTGTTG GCCATACCTG GAATCATCTT	1980
GAGCAAGTCT TCCATCGGCC CCATATTTTG CACCTGATCT AATTGATCGA TGAAATCATT	2040
AAAATCAAAG GTGTTTTCGC GCATCTTCTC AGCCATTTC AAGGCTTTTT GTTCATCGTA	2100
TTCTTGAGAA GCTTCTCTCA TCAAAGTGAG CATATCCCC ATACCAAGGA TACGGCTAGA	2160
CATGCGGTCT GGGTGAAGG TTTCAATGTC CGTAATCTTT TCACCTGTAC CAGTGAACCT	2220
GATTGGTTTT CCAGTAATGT GACGAACAGA CAGAGCAGCA CCACCACGAG TATCGCCATC	2280
AATCTTGGTA AGGATGACCC CAGTCACTTC CAACTGAGCA TTAAACTCAC GCGCAACATT	2340
GGCTGCTTCC TGACCAATCA TAGCATCAAC GACAAGCAAG ATTTTATTTG GTTGAGCCAA	2400
TGCTTTCACA TCACGAAGCT CATTATGAG GAGCTCATCA ATCTGCAAAC GACCCGCAGT	2460
ATCAATCAAG ACATAGTCGT TATGATTAGT TTGGGCTTGC TCCAAACCTT GACGTACAAT	2520

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CTCAACAGCT GGTACTTCTG TTCCAAGTGC AAAGACAGGC ACATCAATCT GTTGTCCCAA	2580
GGTCTTAAGC TGGTCAATGG CAGCTGGACG ATAAATATCC GCCGCAATCA TCAAAGGACG	2640
AGCATTTTCT TCTTTCTTGA GTTGTGTTGC CAATTTACCA GCAAAGGTTG TTTTACCAGC	2700
CCCTTGTAAG CCAACCATCA TGATGATGGT TGGAATCTTA GGTGACTTGA TAATTTCTGC	2760
CGTATCAGAA CCTAAAACGG CTGTCAATTC CTCATCAACG ATTTTAATAA TCTGTTGCGC	2820
AGGATTAAGT GTATCAATGA CCTCATGCCC GACTGCACGC TCACGAACTT TCTTGATAAA	2880
GTCCTTTTACA ACAGGCAAGG CAACGTCGGC CTCGAGCAAG GCCAAGCGAA TTTCTTTGGT	2940
TGCCTCTTGG ACATCAGATT CAGAGATTTT TCCTTTTTTA CGTAGATTTT TAAAGACGTT	3000
CTGCAACGT TCTGTAAAC TTTCAAATGC CATTTTCTT CCTCTTATTC TCTATTATCA	3060
ATGCTTGTTA AAATTTCTAT CTGCTCCTGC AGAAAGTCAT CCTTGGGATA GCGCTCCAAA	3120
ATCTGATCAA AAATCTGACT GCGGACAATA TAGTCCGAGT ACATGTGCAA TTTCATCTCA	3180
TAATCTTCCA GAATCTTTTC TGTTGCTTGG ATATTGTCAT AGACAGCCTG ACGACTGACA	3240
CCGAACTCCT CGGCAATTC AGCAAGGCTG TAATCATCAG CGTAGTAGAG CTCGATATAA	3300
TTCAATTTGCT TATCTGTCAA AAGCGCCGCA TAAATTCAA AGAGCGCATT CATAAGATTG	3360
GTTTTTTCGA TTTCCATAAC TTTTATTATA CCAAAAATTA GCCTAATCTA CCACACTAGG	3420
AAGCCGATCC AAGAAGATAG ATAGCTAAAT TTGAAAAAGA CATGAGCCTA GCCCAAGTA	3480
ATTTCCAATT GATAGCTGGC AAAGGGATGT CCCTCTTGAT TTTGTAGTTG ATAATCTAGT	3540
TCAATCTTTT GCCTATCAAC TTGATAATGG CTCGTTTGA TGATAAACTC CTGCATGCCC	3600
ATAGGTGTAG GAATATAGGC TAACTATCG CTATCCTTTA GAAAGCGCAT AATGGTCTTG	3660
GGATTAGAAA ATCGGCTCAT CACAAGTTCT TGACCATGAA ATTTAATCAC TACTTTTTC	3720
TTTTCTCAT TATAGAAAAG CAGGTAGCTA TAATCTCCTT TTTCATGCAC TTCCACATCA	3780
TAAAGCTGGT CAATCACTTC CAACTGCTCA TCAAACGAA TCGTATTTCG CATCCGAATC	3840
TTACATCAG GCCCTCTTTC TTGTCTCTTG TCCTACTATT TTACCAAAA GAGCAGGATT	3900
TTGCTATAAT GGTCAATGA ACGAAAAAGT ATTCCGTGAC CTGTTTACA ACTACATCCA	3960
TGTCAATAAT CAAATCATCT ATGACTTGAT TAATACAAA GAATTTTTCG GTTTGCGCCG	4020
GATCAACAA CTGGGAACCT CCAGTTATAC CTTCCACGGT GGAGAACACA GTCGCTTCTC	4080
TCACTGTCTA GGAGTCTATG AAATGTCACG ACGCATCACA GAGATTTTCG AAGAAAAATA	4140
TCCTGAGGAA TGGAATCCTG CCGAGTCTCT CTTGACCATG ACCGCTGCTC TCCTACACGA	4200
CCTTGGGCAT GGTGCCTACT CCCATACTTT TGAACATCTC TTTGATACAG ACCATGAAGC	4260

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CATTACTCAG GAGATTATTC AAAATCCTGA GACAGAGATT CACCAAGTCC TGCTACAAGT	4320
GGCACCTGAT TTCCCAGAAA AGGTGGCCAG TGTCATTGAC CATACCTATC CTAATAAGCA	4380
GGTCGTGCAG CTCATTTCTA GTCAGATTGA CGCAGATCGC ATGGACTATC TCTTGCGCGA	4440
CTCCTATTTT ACAGGAGCAT CCTATGGGGA ATTTGACCTG ACTCGAATCC TCCGAGTCAT	4500
TCGTCTATC GAAAATGGTA TCGCCTTTCA GCGCAATGGC ATGCACGCCA TCGAAGACTA	4560
CGTCCTCACT CGCTACCAGA TGTACATGCA GGTTTATTTT CACCCCGCAA CACGCGCCAT	4620
GGAAGTTCTC CTACAGAATC TTCTCAAACG CGCCAAGGAA CTCTATCCTG AGGACAAGGA	4680
TTTCTTTGCC CGAACTTCTC CACACCTCCT GCCTTTCTTC GAAAAAATG TGACCTTGAC	4740
TGACTATCTG GCTCTGGATG ATGGCGTGAT GAATACCTAC TTCCAGCTTT GGATGACCAG	4800
TCCTGACAAG ATTCTTGCGAG ATTTATCGCA TCGCTTTGTC AACCGCAAGG TCTTTAAATC	4860
CATTACCTTT TCACAAGAGG ACCAAGATCA ACTTACTAGC ATGAGAAAAT TGGTTGAGGA	4920
TATCGGCTTT GATCCCGACT ACTACACTGC CATTCATAAG AACTTTGACC TCCCTTATGA	4980
TATCTATCGT CCCGAATCTG AAAACCCACG GACACAGATT GAGATTTTAC AAAAAAATGG	5040
AGAACTGGCC GAACTCTCTA GCCTGTCTCC TATCGTCAA TCCCTTGCTG GCAGTCGCCA	5100
CGGAGATAAT CGCTTTTATT TTCCAAAAGA AATGTTGGAC CAAAACAGCA TCTTTGCAAG	5160
CATTACCCAG CAATTTTAC ACTTGATTGA GAACGATCAT TTTACCCCAA ATAAAACTA	5220
GAAGAGGAAA TTTATAGTA TTAACTAAT TGCCGTTGAT ATCGACGGAA CCCTTGTCAA	5280
CAGCCAAAAG GAAATCACTC CTGAAGTTTT TTCTGCCATC CAAGATGCCA AAGAAGCTGG	5340
TGTCAAAGTC GTGATTGCAA CTGGCCGCCC TATCGCAGGC GTTGCCAAAC TTCTAGACGA	5400
CTTGCACTG AGAGACGAGG GGGACTATGT GGTAACTTC AACGGTGCCC TTGTCCAAGA	5460
AACTGCTACA GGACATGAGA TTATCAGCGA ATCCTTGACT TATGAGGATT ATCTAGATAT	5520
GGAATTCCTC AGTCGCAAGC TCGGTGTCCA CATGCATGCC ATTACCAAGG ACGGTATCTA	5580
TACTGCAAAT CGCAATATCG GAAAATACAC TGTACACGAA TCAACCCTCG TCAGCATGCC	5640
TATCTTCTAC CGTACCCCTG AAGAAATGGC TGGCAAAGAA ATTGTTAAAT GTATGTTTAT	5700
CGATGAACCA GAAATTCTCG ATGCTGCGAT TGAAAAAATT CCAGCAGAAT TTTACGAGCG	5760
CTACTCCATC AACAAATCTG CTCCTTTCTA CCTCGAATC CTTAAAAAGA ATGTAGACAA	5820
GGGTTCAGCC ATTACTCACT TGGCTGAAAA ACTCGGATTG ACCAAAGATG AAACCATGGC	5880
AATCGGTGAT GAAGAAAATG ACCGTGCCAT GCTGGAAGTC GTTGGAACC CCGTTGTCAT	5940
GGAAAATGGA AATCCAGAAA TCAAAAAAAT CGCCAAATAC ATCACCAGAA CAAATGACGA	6000
ATCCGCGCTT GCCCATGCCA TCCGAACATG GGTACTGTAA AAGTATCATT TTTCAATAAG	6060

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AATTGATTAG CAATAAAATC CAATGAATTT TTTTAGCAAA CTATTTAATT TAAAACAAAA	6120
TAATCATAAT AGAGACACAA ATTCTGATTG TAACAATTTT TACCTAAACG AATTAGAATG	6180
TGGCCTTACT CCTGGGCAAC TCATACTCAT AGATTGGACT CAAAAACAG GGAGAAATTA	6240
TAATTTCCCA AGATATTTTA AATACTCTCT TCAAATTGAC CCTGAATCTA CACACAATCA	6300
ATTATACAAA TTAGGATACT TCACTAAAA TAAGACTTTA TCATATCTTA CAGTAGTAGA	6360
ATTAAAACT ATATTATCTA AACATAATTT AGCTACTTCT GGAAAAAAG CAGAATTAAT	6420
TACAAGAATA ATTAATAATG TTAACATTGA CAATTTAGAT ATCCGTTTCG AATTTAACT	6480
AACAAAAGAA GCACAAAATC TTATTATCGA ACATAGTGAC TATATCAAAG CATACTATGA	6540
TAAAGACATA ACTATGGAAG ATTATTGTAA AGAAAAAAC AATATCTCTT TTAAGCAAC	6600
TTTTGGTGAT ATAAATGGA GTCTCTTAAA TAAACAAGCT CATAGGAATA CTGTATCAGG	6660
AGATTTTGGG TGCTTATCTA ACACACGAAA GGCTCAGGGA AGACATTGG AACAAGAAGG	6720
TAATATTAAG CATGCTTTAA TATATTACAT AGAATCTTTG ATAATTACTA TTTCAGGATT	6780
AGAAAACAA TTTTCAGCCA CTGATTATCC AGTATATTAT CCCGATTCGA TACCTGACTA	6840
CTCACTAAAA CATATTCAA CATTAATGGA ATCATTATCT GATGACGATT ATGATTTTGC	6900
TTTTGATGAA GCATTATTC GCTTCTCAAT TTTGAATGCA AATCATTTTT TATCTAAGGA	6960
AGATATTGAC TATTTAAGAG TTAATTTACC TCGTCCACT GCTGAAGAAA TAAACAATTA	7020
CTTAAAGAAA TATGAATGTT ATAGTCCTTT AAATAATTTA GAACTTGACG ATTTTGAATA	7080
AATTGACTAT ACAAACATTT ATATACTCGA TATAGTCTCA ATTTTATCTG ATGATTGCCC	7140
AAATTTTTCATAATAAAAC GCATAATATT ATGGAGACAA TCCCCTATAT TATGCGTTCT	7200
TTTAATATCA AAGACTTTTT GACAACTTC TTTGATATCT AATTACATGC CCCCTGCAGG	7260
AATCGAACCT GCAACTACTC CTTAGGAGGG AGTTGTTATA TCCATTGAAC TAAGGGAGCT	7320
AGATAAAAC TCTGCTAAAT GAGCAGAGTT TTTTAGTCGA ATTAACGACG GATTCTTTG	7380
ATACGAGCTG CTTTACCTTG AAGAGCACGC AAGTAGTACA ATTTGCGACG ACGTACTTTA	7440
CCGTAACGAA CAACTTCGAT TTTTCAACA CGTGGAGTGT GGATTGGGAA GATACGCTCA	7500
ACACCTACAC CGTTAGAGAT TTTACGAACT GTGTAGTTTT CTGAGATTCC AGCACCTTTA	7560
CGTGCGATAA CAACACG	7577

(2) INFORMATION FOR SEQ ID NO: 47:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 4945 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double

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(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 47:

CCTCGCTGAT GATTGGTGCT GTTTTATTTG CTGGTCCAGC CTTGGCTGAA GAACTGCAG	60
TTCCTGAAAA TAGCGGAnCT AATACAGAGC TTGTTTCAGG AGAGAGTGAG CATTTCGACCA	120
ATGAAGCTGA TAAGCAGAAT GAAGGGGAAC ATGCTAGAGA AAACAAGCTA GAAAAGGCAG	180
AAGGAGTAGC GATAGCATCT GAACTGCTT CGCCAGCAAG CAATGAAGCT GCAACTACTG	240
AACTGCAGA AGCAGCTAGC GCAGCTAAAC CAGAGGAAAA AGCAAGTGAG GTGGTTGCAG	300
AAACACCATC TGCAGAAGCA AAACCTAAGT CTGACAAGGA AACAGAAGCA AAGCCCGAAG	360
CAACTAACCA AGGGGATGAG TCTAAACCAG CAGCAGAAGC TAATAAGACT GAAAAAGAAG	420
TCCAGCCAGA TGTCCCTAAA AATACAGAAA AAACATTAAA ACCAAAGGAA ATCAAATTTA	480
ATTCTTGGA AGAATTGTTA AAATGGGAAC CAGGTGCTCG TGAAGATGAT GCTATTAACC	540
GCGGATCTGT TGTCTCGCT TCACGTCGGA CAGGTCAATT AGTCAATGAA AAAGCTAGCA	600
AGGAAGCAAA AGTTCAAGCC TTATCAAACA CCAATTCTAA AGCAAAAGAC CATGCTTCTG	660
TTGGTGGAGA AGAGTTCAAG GCCTATGCTT TTGACTATTG GCAATATCTA GATTCAATGG	720
TCTTCTGGGA AGGTCTCGTA CCAACTCCTG ACGTTATTGA TGCAGGTCAC CGTAACGGGG	780
TTCTGTGATA CGGTACACTC TTCTTCAACT GGTCTAATAG TATTGCAGAT CAAGAAAGAT	840
TTGCTGAAGC TTTGAAGCAA GACGCAGATG GTAGCTTCCC AATTGCCCCG AATTGGTAG	900
ACATGGCCAA GTATTATGGC TATGATGGCT ATTTTCATCA CCAAGAAACA ACTGGAGATT	960
TGGTTAAACC TCTTGAGAA AAGATGCGCC AGTTTATGCT CTATAGCAAG GAATATGCTG	1020
CTAAGGTAAA CCATCCAATC AAGTATTCTT GGTACGATGC CATGACCTAT AACTATGGAC	1080
GTTATCATCA AGATGGTTTG GGAGAATACA ACTACCAATT CATGCAACCA GAAGGAGATA	1140
AGGTTCCGGC AGATAACTTC TTTGCTAACT TTAAGTGGGA TAAGGCTAAA AATGATTACA	1200
CTATTGCAAC TGCCAACTGG ATTGGTCGTA ATCCTTATGA TGTATTTGCA GTTTGGGAAT	1260
TGCAACAGGG TGGTTCCTAC AAGACAAAGG TTAAGTGGAA TGACATTTTA GACGAAAATG	1320
GGAAATTGCG CCTTCTCTT GGTTTATTTG CCCGAGATAC CATTACAAGT TTAGGAAAAA	1380
CTGGTGAAGA TTATCATAAA AATGAAGATA TCTTCTTTAC AGGTATATCA GGAGACCCTA	1440
CTGGCCAAAA ACCAGGTGAC AAAGATTGGT ATGGTATTGC TAACCTAGTT GCGGACCGTA	1500
CGCCAGCGGT AGGTAATACT TTTACTACTT CTTTAAATAC AGGTCATGGT AAAAAATGGT	1560
TCGTAGATGG TAAGGTTTCT AAGGATCTG AGTGAATTA TCGTTCAGTA TCAGGTGTTC	1620

TTCCAACATG GCGCTGGTGG CAGACTTCAA CAGGGGAAAA ACTTCGTGCA GAATATGATT	1680
TTACAGATGC CTATAATGGC GGAAATTCCC TTAAATTCTC TGGTGATGTA GCCGGTAAGA	1740
CAGATCAGGA TGTGAGACTT TATCTACTA AGTTAGAAGT AACTGAGAAG ACCAAACTTC	1800
GTGTTGCCCA CAAGGGAGGA AAAGGTTCTA AAGTTTATAT GGCATTCTCT ACAACTCCAG	1860
ACTACAAATT CGATGATGCA GATGCATGGA AAGAGCTAAC CCTTTCTGAC AACTGGACAA	1920
ATGAAGAATT TGATCTTAGC TCACTAGCGG GTAAAACCAT CTATGCAGTC AAATATTTT	1980
TCGAGCATGA AGGTGCTGTA AAAGATTATC AGTTTAACCT AGGACAATTA ACTATCTCGG	2040
ACAATCACCA AGAGCCACAA TCGCCGACAA GCTTTTCTGT AGTGAAACAA TCTCTTAAAA	2100
ATGCCCAAGA AGCGGAAGCA GTTGTGCAAT TTAAAGGCAA CAAGGATGCA GATTTCTATG	2160
AAGTTTATGA AAAAGATGGA GACAGCTGGA AATTACTAAC TGGCTCATCT TCTACAATA	2220
TTTATCTACC AAAAGTTAGC CGCTCAGCAA GTGCTCAGGG TACAACTCAA GAACTGAAGG	2280
TTGTAGCAGT CGGTAAAAAT GGAGTTCGTT CAGAAGCTGC AACCACAACC TTTGATTGGG	2340
GTATGACTGT AAAAGATACC AGCCTACCAA AACCCTAGC TGAAATATC GTTCCAGGTG	2400
CAACAGTTAT TGATAGTACT TTCCCTAAGA CTGAAGGTGG AGAAGGTATT GAAGGTATGT	2460
TGAACGGTAC CATTACTAGC TTGTCAGATA AATGGTCTT AGCTCAGTTG AGTGGTAGTG	2520
TGGATATTCG TTTGACCAAG CCACGTACCG TTGTTAGATG GGTGATGGAT CATGCAGGAG	2580
CTGGTGGTGA GTCTGTTAAC GATGGCTTGA TGAACACTAA AGACTTTGAC CTTTATTATA	2640
AAGATGCAGA TGGTGAGTGG AAGCTAGCTA AGGAAGTCCG TGGTAACAAA GCACACGTGA	2700
CAGATATCAC TCTTGATAAA CCAATCACTG CTCAAGACTG GCGCTTGAAT GTTGTCACCT	2760
CTGACAATGG AACTCCATGG AAGGCTATTC GTATCTATAA CTGGAAAATG TATGAAAAGC	2820
TTGATACTGA GACTGTCAAT ATTCCGATGG CCAAGGCTGC AGCCCGTTCT CTAGGCAATA	2880
ACAAGGTACA AGTTGGCTTT GCAGATGTAC CGGCTGGAGC AACTATTACC GTTTATGATA	2940
ATCCAAATTC TCAAACCTCG CTCGCAACCT TGAAGAGCGA AGTTGGAGGA GACCTAGCAA	3000
GTGCACCATT GGATTTGACA AATCAATCTG GTCTTCTTTA TTATCGTACC CAGTTGCCAG	3060
GCAAGGAAAT TAGTAATGTC CTAGCAGTTT CCGTTCCAAA AGATGACAGA AGAATCAAGT	3120
CAGTCAGCCT AGAAACAGGA CCTAAGAAAA CAAGCTACGC CGAAGGGGAG GATTTGGACC	3180
TTAGAGGTGG TGTTCTTCGA GTTCAGTATG AAGGAGGAAC TGAGGACGAA CTCATTGCCC	3240
TAACTCACGC AGGTGTATCA GTATCAGGTT TTGATACGCA TCATAAGGGA GAACAGAATC	3300
TTACTCTCCA ATATTTGGGA CAACCGGTAA ATGCTAATTT GTCAGTACT GTCAGTGCC	3360

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AAGACGAAGC AAGTCCGAAA ACTATTTTGG GAATTGAAGT AAGTCAGGAA CCGAAAAAAG	3420
ATTACCTAGT TGGTGATAGC TTAGACTTGT CTGAAGGACG CTTTGCAGTG GCTTATAGCA	3480
ATGACACCAT GGAAGAACAT TCCTTTACTG ATGAGGGAGT TGAAATTTCT GGTTACGATG	3540
CTCAAAAGAC TGGTCGTCAA ACCTTGACGC TTCATTACCA AGGCCATGAA GTTAGCTTTG	3600
ATGTTTTGGT ATCTCCAAA GCAGCATTGA ACGATGAGTA CCTCAAACAA AAATTAGCAG	3660
AAGTTGAAGC TGCTAAGAAC AAGGTGGTCT ATAACCTTGC TTCATCAGAA GTAAAAGAAG	3720
CCTTCTTGAA AGCAATTGAA GCGGCCGAAC AAGTGTGAA AGACCATGAA ACTAGCACCC	3780
AAGATCAAGT CAATGACCGA CTTAATAAAT TGACAGAAGC TCATAAAGCT CTGAATGGTC	3840
AAGAGAAATT TACGGAAGAA AAGACAGAGC TTGATCGCTT AACAGGTGAG GTTCAAGAAC	3900
TCTTGGCTGC CAAACCAAAC CATCCTTCAG GTTCTGCCCT AGCTCCGCTT CTTGAGAAAA	3960
ACAAGGCCTT GGTTGAAAA GTAGATTTGA GTCCAGAAGA GCTTACAACA GCGAAACAGA	4020
GTCTAAAAGA TCTGGTTGCT TTATTGAAAG AAGACAAGCC AGCAGTCTTT TCTGATAGTA	4080
AAACAGGTGT TGAAGTACAC TTCTCAAATA AAGAGAAGAC TGTCATCAAG GGTTTGAAAG	4140
TAGAGCGTGT TCAAGCAAGT GCTGAAGAGA AGAAATACTT TGCTGGAGAA GATGCTCATG	4200
TCTTTGAAAT AGAAGGTTTG GATGAAAAAG GTCAAGATGT TGATCTCTCT TATGCTTCTA	4260
TTGTGAAAAT CCAATTGAA AAAGATAAGA AAGTTAAGAA AGTATTTTTC TTACCTGAAG	4320
GCAAAGAGGC AGTAGAATTG GCTTTTGAAC AAACGGATAG TCATGTTATC TTACAGCAC	4380
CTCACTTTAC TCATTATGCC TTTGTTTATG AATCTGCTGA AAAACCACAA CCGCTAAAC	4440
CAGCACCACA AAACACAGTC CTTCCAAAAC CTACTTATCA ACCGACTTCT GATCAACAAA	4500
AGGCTCCTAA ATTGGAAGTT CAAGAGGAAA AGGTTGCCTT TCATCGTCAA GAGCATGAAA	4560
ATACTGAGAT GCTAGTTGGG GAACAACGAG TCATCATACA GGGACGAGAT GGACTGTTAA	4620
GACATGTCTT TGAAGTTGAT GAAAACGGTC AGCGTCGTCT TCGTTCAACA GAAGTCATCC	4680
AAGAAGCGAT TCCAGAAATT GTTGAAATTG GAACAAAAGT AAAACAGTA CCAGCAGTAG	4740
TAGCTACACA GGAAAAACCA GCTCAAAATA CAGCAGTTAA ATCAGAAGAA GCAAGCAAAC	4800
AATTGCCAAA TACAGGAACA GCTGATGCTA ATGAAGCCCT AATAGCAGGC TTAGCCAGCC	4860
TTGGTCTTGC TAGTTTAGCC TTGACCTTGA GACGAAAAAG AGAAGATAAA GATTAAATAT	4920
CGAAAAATCT TGTGAAATCT TTCCG	4945

(2) INFORMATION FOR SEQ ID NO: 48:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 25002 base pairs
 (B) TYPE: nucleic acid

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(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 48:

GACAACTCAA GTAGCTTTTT CTTATTTTGA AAAAGGAGAT CAGAGTTTAA CTATGTCAGA	60
AAAATCACAA TGGGGGTCGA AACTTGTTTT TATTCTAGCA TCTGCTGGCT GGCCATCGGG	120
CTTGTTCCG TTTGGAAGTT TCCCTACATG ACTGCTGCTA ATGGCGGTGG AGGCTTTTTA	180
CTAATCTTTC TCATTTCCAC TATTTTAATC GGTTCCTC TCCTGCTGGC TGAGTTTGCC	240
CTTGCGCGTA GTGCTGGCGT TTCCGCTATC AAAACCTTTG GAAACTGGG CAAGAATAAC	300
AAGTACAACT TTATCGGTG GATTGGCGCC TTTGCCCTCT TTATCCTCTT ATCTTTTAC	360
AGTGTATCG GAGGATGGAT TCTAGTCTAT CTAGGTATTG AGTTTGGGAA ATTGTTCCAA	420
CTTGTTGGAA CGGGTGATTA TGCTCAGTTA TTTACTTCAA TCATTTCAAA TCCAGCCATT	480
GCCCTAGGAG CTCAAGCGGC CTTTATCCTA TTGAATATCT TCATTGTATC ACGTGGGGTT	540
CAAAAAGGGA TTGAAAGAGC TTCGAAAGTC ATGATGCCCC TGCTCTTTAT CGTCTTTGTT	600
TTTATCATCG GTCGCTCTCT CAGTTTGCCA AATGCCATGG AAGGGGTTCT TTACTTCCTC	660
AAACCAGACT TTTCAAACT GACTAGCACT GGTCTCCTCT ATGCTCTGGG ACAATCTTTC	720
TTTGCCCTCT CACTAGGGGT TACAGTCATG TTGACCTATG CTTCTTACTT AGACAAGAAA	780
ACCAATCTAG TCCAGTCAGG AATCTCCATC GTAGCCATGA ATATCTCGAT ATCCATCATG	840
GCAGGTCTAG CCATTTTCCA AGCTCGATCC CCCTTCAATA TCCAGTCTGA AGGGGGACCC	900
AGCCTGCTCT TTATCGTCTT GCCTCAACTC TTTGACAAGA TGCCTTTTGG AACCATTTTC	960
TACGTCTCTT TCCTCTTGCT CTTCTTTTTT GCGACAGTCA CTTTCTCTGT CGTGATGCTG	1020
GAAATCAATG TAGACAATAT CACCAACCAG GATAACAGCA AACGTGCCAA ATGGAGTGTT	1080
ATTTTAGGAA TTTTGACCTT TGTCTTTGGC ATTCTTCAG CCCTATCTTA CGGTGTCATG	1140
GCGGATGTTT ACATTTTGG TAAGACCTTC TTTGACGCTA TGGACTTCTT GGTTCCTCAAT	1200
CTCCTCATGC CATTGAGAGC TCTCTACCTT TCACTTTTTA CAGGCTATAT CTTTAAAAAG	1260
GCTCTTGCAA TGGAGGAACT CCATCTCGAT GAAAGAGCAT GGAAACAAGG ACTGTTCCAA	1320
GTCTGGCTCT TCCTTCTTCG TTTCTTCGTT TCGTCATTCC AATCATCATC ATTGTGGTCT	1380
TCATTGCCCA ATTTATGTAA TCAAAAAGGA CTTGAGTAGT GAACTCAGGC CCTTCTTTTT	1440
TATGGATGGC TAACAATCAA TTCCAAACCT TGCCCTTCCA GAGTCCAAGC TTCAACATCA	1500
CTTGGTAGGA TAAAGTGGCT GCCTTTTTGA ATTGGATAAT TTTTCCCGTC AACAGTTAGC	1560

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TGACCTTGAC CAGCCAAGAC ACTCAATAAG CTGTAGTCAG CTGTCTTTTC AAAGTCAACT	1620
TTTCCAGTAA TTTCCCACTT GTAAACTGCG AAGAAATCAT TAGATACAAG GAGAGTGGAA	1680
CGCAAATCAT CTGCTTTAAC AGTTACAGGA CGGCTATTTG CTGGCTCACC AATGTTCAAG	1740
ACATCGATGG ATTTTTC AAG ATGAAGTTCA CGCAAGTTGC CTTTGTCTATC CTTGCGGTCA	1800
AAGTCATAGA CGCGATAGGT GGTATCGCTA GACTGCTGGG TTTCAAGGAT TAAGATACCC	1860
GCCCCGATAG CGTGCATAGT CCCGCTTGGT ACATAGAAGA AATCTCCAGC CTTAACAGGG	1920
ACTTTGGTCA ACAAGTCATC CCAGTTCTTG TCCTCGATTT GCTGGCGGAG TTCTTCTTTT	1980
GACTTGGCAT TGTGACCGTA GATAATCTCT GAACCTTCAT CCGCTGCGAT AATGTACCAG	2040
CATTCTGTTT TTCCGAGTTC GCCTTCATGC TCGAGTCCAT AAGCATCGTC TGGGTGAAC	2100
TGGACACTGA GCCAGTCGTT GGCATCGAGG ATCTTGGTCA AAAGTGGAAA TACAGGTCTCT	2160
GGACGATTGC CAAATAATTC ACGGTGTTCC GCATACAAAG TAGCAAGATC TGTTCCTCG	2220
TAACGACCAT TGGCAACTTT AGAGACTCCA TTTGGATGGG CTGAGATGGC CCAATATTCT	2280
CCGATTTTTT CACTTGGGAT GTCGTAGCCA AACTCATCAC GTAGCTTGGC TCCACCCAG	2340
ATTTTTTCTT GCATAACTGA TTGTAAAAAT AATGGTCTG ACATGTCGAT CTCCTGTCTG	2400
ATTTTTCTCC CCTCATTATA GCAAAAAAAG AGTTCGAAT GAACCTTTT TTACATCTTA	2460
TAAAGCAGGG AGAAGATTTT ATAAAAATAG TAAACAAATG TGCTCTACCC GATGCTTGCA	2520
CCATTGCTAT AAATGACATC CTTGTACCAA TAGAAGGACT TCTTCTTGCT ACGTTTGAGA	2580
GCTCCGTTTC CTACATTATC TCGATCTACA TAGATAAAGC CATAGCGCTT ATTCATTTC	2640
CCTGTGCCAG CTGAAACCGG ATCGATACAG CCCCAAGTCG TATAACCAAG CAAGTCAACC	2700
CCGTCTTGGT AAATGGCATC TCGCATGGCC TTGATGTGGG CCTCTAAGTA AGTAATCCGA	2760
TAGTCATCTG CTACATAACC ATTCTCATCC GGTGTATCCA TAGCACCAG TCCATTTTCT	2820
ACGATAATAC TAAACTAAAA TCAAAAAGCA TTATATAATA GTGATATGAA ATCAACTAAA	2880
GAAGAAATCC AAACCATCAA AACACTTTTA AAAGACTCTC GTACAGCTAA ATATCATAAA	2940
CGCCTTCAAA TCGTTCTATA GTAAAAAGTA ATAAGAACAG TACAAATCGA TCAGGACAGT	3000
CAAATCGATT TCTAACAATG TTTTAGAAGT AGGGGTGTAC TATTCTAGTT TCAATCTACT	3060
ATATTTTCGTC TGATGGGCAA ATCTTATAAA GAGATTATAG AACTTTTATA GTAGTTTGAA	3120
ATAAGATGTG AACAACTCTA TCAGGAAAGT CAAATTAATT TATAGAAATA TTTTAGCAGC	3180
CAAGGTGTAC TGTATAGAT TCAATACACT ATAGACTGTA ATCAAACAAC GATTGGCGA	3240
AATGTAAAAA AATATGAGGA GTTCGGACTC GACTCTCTCC TTCAAGAAAC ACGTGGTGGT	3300
CGTAACCATG CATATATGAC AGTTGAGGAA GAGAAAGCCT TTCTTGCCCG CCATTTGAAG	3360

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GCTACAGAGG CAGGAGAATT TGTTCACAATT GATGCCTTAT TTCAGGCTTA TAAAAAGGAG	3420
TTAGGTCGTT CCTACACACG TGATGCCTTC TATCAACTGT TGAAGCGCCA TGGTTGGCGA	3480
AATATTACGC CACGTCCAGA ACATCCTAAG AAAGCAGACG CTCAAACCAT TGTTCGTCT	3540
AAAAATAAAA TCTCAATCCA AGAAGGCAAG AAAGCGTTTT AAATATAGTA GACGTTTTTCG	3600
TAAGGTTTGC TTGATGTACC AAGCTGAAGC TGGTTTCGGT AGAATCAGTA AACTGGGATC	3660
TTGTTGGGCT CCAATAGGAG TAGGTCCACA TATCCATAGT CACTATATAC GAGAATTTTCG	3720
CTATTGTTAT GGAGCTGTTG ATGCCTATAC AGGCGAATCA TTTTCTTAA TAGCTGGTAG	3780
ATGTAATACT GAGTGGATGA ACGCCTTTTT AGAAGAGCTT TCACAAGCTT ATCCTTTTAC	3840
TCGTTATGGA CAATGCTATA TGGCATAAAT CAAGTACCTT AAAGATTCCG ACTAATATTG	3900
GTTTTGCATT TATTCCTCCA TACACACCAG AGATGAACCC CATTGAACAA GTGTGGAAAG	3960
AGATTTCGTAA ACGTGGATTT AAGAATAAAG CCTTTCGAAT TTTGGAAGAT GTCATGAATC	4020
AACTCCAAGA TGTCATACAA GGATTGGAGA AGGAGGTGAT AAAGTCCATC GTTAATCGGA	4080
GATGGACTAG AATGCTTTTT GAAAGCAGAT GAGTATTATA TGCAATTTCT TTATATAAAA	4140
AGACCGGATT GCTCCGATCT TTCAATAGTT CATATTCTCA ATTTCTATTT TAAAAATAGC	4200
TAAGGTAAAC GTCAAATGAC TACGCGACCT ATTTCATACG ATAAAAATCA AGCACTAGAC	4260
CAGCAGGTCC TTGAACTAAT AAGGACTCTG TTCCCAATC GGTTACAGTT GGTCCGTGTA	4320
AAACCTTTAT ACCAAGCTCG TTCAACCGTT TGTAAGTTCTG GTCTACATCC TCAACCTCGA	4380
TATGAATAAT GATTCCTGAC TGAAAGTTTT CCAAAGGAAC CAAATGATTT TGTGACAACA	4440
TAAGGCAGTG ACTACCAATC GTAAACTGAG CAAAACCATC ATTAGCATAA TCTGCCTTTT	4500
TATCCAAGAT ATGCTCCAAG TCAGCACAGA CTTGGGGAAC ATTTGAAACG ATAATATCTA	4560
ATTGATTTAA ATTCATTTAC TCTCCTCCAT AAAAAGACCG GATTGCTCCG ATCTTTTAAA	4620
GTCTGCTCT ATGAAAATCA AAGAATAAAG TCTACAAGTT TCATATTTGA TTTTCGGCGA	4680
GAGGAATTAT TTAATTGCGC GTGATTGCAA TCCTTCTTCT TCCAAGAAGA GACGGAATGG	4740
TACGAGTTCT TCTGCTTCGT ATTTTTCCTT GAAGGCTTTG ATAGCTTCTT CTGAGTGAAG	4800
TTTTGGATCC AATTCAAGTA CTTCTACTGG AAGTGGACGG TGTTGAGTGA TGCGAGCATC	4860
GATGACAACA GTTTTACCTT CTTTGTTCAA TTAAACAGCT TCTGCAACAA CTGCATCGAT	4920
GTCTTCGATA CGGTCAACTG TGAATCCAAC AGCTCCTTGA GCTTCCGCAA TTTTAGCGTA	4980
GTCAGCGTTT GTGAAGTCTA CACCAAACAA GTGTTTGTTC GTATCTTCGT ATTTGTTCTT	5040
GATGAAGCCG TACTCAGCAT TTGAGAAGAC AAGGTTGATA ACTGGAAGGT CGTATTGAAC	5100

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GTTTGTGATA ACGTCTGGGT AGCACATGTT GAATGCTCCG TCACCCATGA TGTTCATAC	5160
TTGGCGATCT GGATTGTCTT TCTTAGCAGC GATACCACCA GGAAGGGCAA TACCCATTGT	5220
CGCAAAGAGT GGAGATGTAC GCCACATGTT CTTAGGTGTC ATGTGAAGGT GACGAGTAGA	5280
TGTTTGAGTA GTGTTACCTA CGTCGATTGA GTAGATAGCG TCTTGATCAG CATGTTTGTT	5340
GATTGCATTG TAAACTTGAT ACAATTGCAA TTCACCCTCA GTTTTACCTT CGAGTTTGTT	5400
CATGTAATCA CGCCAGTTTT GGTTGTTCTT AACGTTTGCA CGCCACCATG GAGTTGATTC	5460
AACTGGGTTT ACTTTGTCAA GGATAGCTTT AGTGCTTGA CCAGCATCAC CAAGGATTGA	5520
AGCGTCAAGG GCATGACGTT TACCAAGTTT GTAAGGGTCG ATATCGACTT GGATGAATTT	5580
TTCAAGTGTG TTGAATGCTT CGTAACTTC AGCAAATGGG AAGTTTGAAC CAAGGAAAAG	5640
AACTGTGTCT GCTTCAAAGA CCACTTCGTT GGCTGGTTTC CAACCAACAC GGTAAGCAGA	5700
ACCTGTCAAA CCTTCATAGT TCCATTCGAA AGCTTCAAAG TTTTACCAG TTGTGATGAT	5760
TGGTGCTTTG ATTTTACGTG ACAATTCAGT AATCACTTCA CCAGCTTTAA CACCACCAA	5820
TCCAGCATAG ATAATGGGC GTTCAGCATT GTTCAAGATT TCAACAGCTT TGTCGATTTC	5880
AACTTCGTTT AAAGCAGGAG CGATGAATGA GCGTTCGTAT GAACCTGAAC CGTAGTATGA	5940
GTTTTCATCG ATTTCTTGGA AACCGAAGTT TACTGGAATT TCAACAACAG CTGGACCTTT	6000
TTTAGAAACT GCAGCACGGC AGGCTTCGTC AATTACTTTT GGCAATTGCT CAGCGTAAGC	6060
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AGCATCCATG TTCAATTCGT TAACTGGACG TGATCCAAGG ATCGCTAGGA ATGGAGTGTT	6180
ATCCATAGCT GCATCGTAAA CACCGTTAAT CAAGTGAGTC GCACCTGGAC CACCTGAACC	6240
AACTGCAACC CCGATTGAGC CGCCGAATTT AGCTTGCTA ACCGCTGCAA GAGCACCTGT	6300
CTCTTCGTGG CGAACTTGTA AGAAACGGAT ATCTTTGTCT TCAGCCAAAG CGTCCATCAA	6360
TGAGCTGAGT GTTCCTGATG GGATACCGTA GATTGTATCT ACGCCCCATG TTTCAATAC	6420
GTTAAGCATT GCTGCAGATG CAGTAATTTT CCCTTGAGTC ATAATGATAA CTCTCCTTCA	6480
ATTTTTTTAA ACTTGAGAGT TACGATTACA TAGAATTGGA AACGTTCTCC AAATTTTAC	6540
TATTCCACTG TATCATATTT ATGCTGACTT TTCTAAAAAT CTGCTCAAAA CTCTCTATTC	6600
TCTATTCTAA TACAGTTTGG AAAGTTCTGT CATTTCTGTT TTATAACAAA GAAATCTAGT	6660
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GAACTAAAGG CCATGGCTAG ACCTGCCAAT TCTGGGTGTA GAGCCAGTCC AACACCTGAA	6780
AAGACTCCTG CTGCAATCGG AATCCGACA ACATTGTAGA TAAAAGCCCA GAAAAGATTG	6840
AGTAGAATTC GATGAAAGGT TTTCTTACTC ATATCAAAGG CACGAACCAC TCCTAAAAGA	6900

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TTATTGGTTG TCAACACCAA ATCTGCTGAC TCGATGGCGA TATCTGTTCC AGCTCCCATA	6960
GCAATCCCCA CATCTGCTAC ACTAAGGGCA GGAGCGTCAT TGATACCGTC CCCAACAAAG	7020
GCTACTTTCC CTGACTGTTG CAGTTTATGG ATTTTCATGG CTTTTTCTTC TGGCAAGACG	7080
CCTGCAATGA CCTCTTCAAT TCCGATTGTA TCTGCAATAG CACGCGCCAC ACCAGCATTG	7140
TCTCCTGTCA GCATGACTGT TCGGAGACCA CGTTTTTTTA GCTGACTGAT GGCTAGCTTA	7200
GCATTTTCCT TAGGAATATC TTGCAAAGCA AGCAAGCCTT TGATTTTCATT GTCAACAGCT	7260
AAGAACACAA CTGTCTTAGC TTCTTTTCTT AGTTCCTTCTA GTTTATCTTG ATAAGTATTA	7320
GAAATATCCA TGCCATCCAG CATTTTAGCA TTTCCAAGTA AAACCTGTTT TCCATTGATT	7380
CGCCCTGAAA CACCTTTCCC GTGCAAGGAC TGAAAATTTT CAACAGTTTG AAACCTCAAGT	7440
CCAGCTTCAC TCGCTCGCTT AACGATAGCC TCAGCCAGTG GGTGTTGAGA AGCATCTTCC	7500
AAGGAGGCTG CCAACCCAAA CACTTCTACT TCGTCGCCGA TGACATCTGT TACCACAGGT	7560
TTCCCTTCCG TCAAAGTCCC GGTCTTATCA AAGACAAGGG TTTGAACTTT CTGGATTTC	7620
TGTAAGACAG TTCCATTTTT GAGGAGAACC CCCATCTTGG CACTACGTCC TGTCCCCACC	7680
ATAAGGGCTG TCGGTGTTGC AAGTCCCAAG GCACAAGGAC AGGCGATAAT CAAAACCGCC	7740
ACTCCGTAGA GAAGAGAGGA CACAAAGCTA GCTCCAAGCA CAACCACACT ATCCCTGAGC	7800
AAGACGAACC AAACCCAAAA GGTTCATGATT CCTAAAATGA CAACTACTGG GACAAAAATC	7860
CCTGAAATCT TATCCGTCAA GTCCTGAATC GGCGCACGAC TTGTCTGAGC TTTCTTCACA	7920
AAATCCACAA TCTGAGCCAA AACAGTCTCT GAGCCAACCT TTTCTGCTCT AAAGACAAGC	7980
GTTCCACTAT GATTGATGGT TGAGCCAATG ACAGTATCTC CAACTGTCTT GTCCACAGGC	8040
AGACTCTCAC CTGTCACCAT GGATTCGTCA ATACTAGAGA CACCTTCTAC TACGACACCA	8100
TCAACAGCAA TCTTTTCACC GGGACGCACT CGAATCAGGT CGCCTACCTT GACTTGTTC	8160
AAAGGAACTT GGACATAACT ATCATCACTC AAGACTTCTG CGGTTTTAGC TTGCAAGTCC	8220
AGTAATTTCT CCACAGCTTG GGACGTATTT TTTCTCATT TTTCTCATAA AACTGCTCCC	8280
AAAAGAACGA AAAAGAGGAT AAATCCAGCA CTTTCGAAGT AAACAGGGAG ACCAGCAAAG	8340
AGAGCAACTA GGCTATAGAA ATAAGCCACT AGAGTTCCCA GCGCAACCAA GGTATCCATG	8400
TTGGCATTGT GCTTTTTAAA ACTGGCCCAA GCACTCTGGA TATATGGCTT ACCTGCAACT	8460
AACATAATAG GCGTTGTTGC TAGAAAGGTT CCCCAATGCA TGACTTGATG ACTAATGCTA	8520
CCTGTCAACA TCCCAATCAT GAGAATCACA AGAGGCACAG TAAAGATACT AGTAATCCAA	8580
AAACGTTGCA GGAGAGATAG AGATTTTCGA GTCTTCTCAA CGACTGTATA GCTTCCCTTT	8640

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TGCATCTTCA	TGCCACAAGA	AAATTCATGT	CGCCCTAATT	CTTGAGGCGT	AAAACGAATG	8700
ACTTTCTCCT	CATCTACGCC	GATTGGTTCC	AAGATACCTT	CTTCTTCAA	CAGAATTTC	8760
TTATAACAGT	TTGAAGGAGT	AGCACGATGA	AAGGTAATCT	CAGCTGGAAT	TCCCTTTTGA	8820
AGCTGGATAT	GGGCTGGATG	ATAGCCTTTT	TCAGCTCGGA	TACGGATTTT	TTGAATGCCA	8880
TTTTCTAAGC	TTGCTTTCAC	AATTTCTGTC	ATAGTCTCCA	CCTACTCTAC	AATCATCTTG	8940
CCGTGCATCA	TGTTCATACC	ACAAGCAAAG	CCAAACTCTC	CAGCCTGTTC	AGGCGTGATT	9000
TCCACTACAT	ACTCTTCCCC	CATTGGCAGG	TTCGCATGTA	CACCAAAATC	TGGAAAAACA	9060
ATTTGATCCA	GACATGGTGA	AGGATCCTTG	CGGTCAAAGA	CAATGCGTGC	TGGCACTGAT	9120
TTCTTGAGGA	CAATCAACTC	AGGAGTATAG	CCTCCCATGA	CTTCCACTCG	AATCTCTTGG	9180
TATCCGTTTT	TTTGCTGGGC	TTTTTGTCCA	GATTTTTCAG	GCTTTTGTAA	AAACCAAAAC	9240
AAGATAAACG	CGATAAGGGC	AATACAAATA	ATGGTTACAA	TACTATTTAA	CATGACGTCT	9300
CCTTTACATA	CAATTACATC	TTACTTCTGT	TACAGCACTT	GATTTCTTCT	CTGAAATCAC	9360
AGCTTCCAAG	TCTTCCAAGT	CAGTCTGAGT	AAATTCACAT	TCTACAATCA	AGTCAGCCAA	9420
CAAATTCCTA	ATCCTACGGG	AACAAACCTT	GTCTTTGATA	TCTTGACAA	GTAAATCCCG	9480
ACTTTGGTCT	AGAGTTAAAA	GGGCTGAATA	AACAAAGGAC	TTGCCTTCTT	TTTTCCGAGT	9540
CAAACACTCT	TTATCAACCA	GACGAGCCAA	AAGTGTCTGA	ACCGTGGACT	TGGACCAGTC	9600
AAACCGCTCT	GCCAAAACCC	TAATCAAATC	TGTACTGGTC	TGCTCCCCCT	GCATCCAAAT	9660
AATCTTCATG	ACCTGCCATT	CTGCATCTGA	AATCTGCATT	ACCATACCTC	CAAAATCTAC	9720
ATTTGTCAAT	TACACTCATC	AGTATACTCT	TAAAATCTAC	ATTTGTCAAT	TATAGAAATA	9780
ATATTTTCTT	CGAAAAATAG	AATTTTAATC	ATTTGAAAAA	CGATTTGCAG	TCAAATATTA	9840
CTATATAAAC	AATAAAAATA	TGCTATACTA	AAGAAAAAAG	AAAACAACCA	CTAGGGGTGC	9900
GTAAAGCTGA	GATTAACGAC	TGTTAGATCC	CTCTGACTCA	ATCTAGGTAA	TGCTAGCTGA	9960
TGGAAGTGGA	AATGATAATG	GGGACTAGCA	GTCTTCTATT	GCCTTTCTAA	AACAGACTAG	10020
CTTGTTCTTA	AGAATACAAA	CTTCAGTTGG	TTGGGAGGTT	TTAGATGACT	TATTTACCCG	10080
TTGCTTTGAC	CATTGCAGGG	ACTGACCCTA	GTGGTGGTGC	TGGCATTATG	GCAGATTTAA	10140
AGTCATTCCA	AGCGAGAGAT	GTCTATGGAA	TGGCTGTTGT	AACCAGTCTT	GTCGCTCAAA	10200
ATACCAGAGG	TGTTCAAGCTA	ATCGAGCACG	TTTCTCCTCA	AATGTTGAAA	GCCCAATTGG	10260
AGAGTGCTTT	TTCTGATATT	CCACCTCAGG	CTGTAAAAAC	TGGAATGTTG	GCTACTACTG	10320
AAATCATGGA	AATCATCCAA	CCCTATCTTA	AAAAACTGGA	TTGTCCCTAT	GTCCTTGATC	10380
CTGTTATGGT	TGCTACAAGT	GGAGATGCCT	TGATTGACTC	AAATGCTAGA	GACTATCTCA	10440

AAACAACTT ACTACCTCTA GCAACTATTA TTACGCCAAA TCTTCCTGAA GCAGAAGAGA	10500
TTGTTGGTTT TTCAATCCAT GACCCCGAAG ACATGCAGCG TGCTGGTCGC CTGATTTTAA	10560
AAGAATTTGG TCCTCAGTCT GTGGTTATCA AAGGCGGACA TCTCAAAGGT GGTGCTAAAG	10620
ATTCCTCTT TACCAAGAAT GAACAATTG TCTGGGAAAG CCCACGAATT CAAACCTGTC	10680
ACACCCATGG TACTGGATGT ACCTTTGCTG CAGTGATTAC TGCTGAACTA GCCAAGGGCA	10740
AGAGTCTTTA CCAGGCAGTT GATAAGGCCA AGGCCTTTAT CACAAAAGCT ATTCAAGATG	10800
CCCCTCAACT CGGTCATGGT TCTGGTCCAG TCAACCATAC AACTTTTAAA GATTAAGAAA	10860
AAAAACTCTC TAGTTCCAC TTTAAGGGAA TTAGAGAGTT TTTATACTCT TCGAAAATCT	10920
CTTCAAACTA CGTCAGCTT CATCTGCAGC CTCAAACAC TGTTTTGAGC TGACTTCGTC	10980
AGTCTTATCT AAAACCTCAA GGCAGTACTT TGAGCAACCT GCGACTAGCT TTCTAGTTTA	11040
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CTTGCGTTTT TGCTCAATA TCTTCTGCTT GCATCAAATC ACGTACAACA GCTACACCAG	11160
CTATGCCAGT GCCCATAAGC TGATCAATAT TCTCCGAAGT CAAGCCTCCA ATAGCAACTA	11220
CTGGAATGGC AACCGTTTGG CAAATTGTTT TCAAGGTCGA TATCAGAGTA ATGGGCGCAT	11280
TTTCCTTGGT GGTGGTTGGG AAAATGGCTC CTGTACCCAA GTAATCTGCA CCTGATTCTT	11340
CCGCTTCCAG AGCTCTTTTA ACCGTTTGTAG CGGTGACACC GAGGATTTTT TCAGGACCCA	11400
AGACTTTGCG AGCTACCGAA ACTGGTAATT CATCATCTCC GATATGCAGA CCTGCTGCAT	11460
CAACCGCAAG ACAAACATCC AACCGATCAT CGATTATCAA GGTACCTGA TAAGCATCTG	11520
TTATTTCTT GACTTGTTTT GCCAGTTGAT AATATTGATT GGTGTGAGA TTTTTTCTC	11580
GCAATTGGAC TATGGTAACC CCTGAACGGC AGGCCGTCTC AACTTTTGCA AGAAAGCTTT	11640
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AGTACTTGGT AACGAAATTC TTCCAATCCC ATTCCTTGAA CAACTATTTT CTCAGCAGCG	11820
ATATTGAGAT AAGAGACTGC TAAGCAAGAA GCTTCAAAC CAGTCTTTCC TTGGCTGAGA	11880
AAAACAGCTG TTAAGGCTCC AACCAAGTCT CCTGTCCCTG TTATCCAGTC TAATTCAGTA	11940
CAGCCATTTT CCAGTACAGC GACCTGATTT TTCGAAACGA CGAGGTCCTT GGGACCTGTG	12000
ACTAAGAAAG ACATACCAGG ATAGGTCTGA CACCACTCTT TCAAGACTTG AAGCAAATCC	12060
TCCGTTTCTT GATCTTTAGC ACTCGCATCG ACCCCAACGC CGTGGTGCTT TAATCCAACA	12120
AGACTTCGAA TTTCTGACAT GTTTCCTTTA AGGACCGTAG GTCTATAGTC TAAAAGGTCT	12180

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TTAACTAAGC TCTTACGAAT GGATGAAGTC GTTACGCCAA CCGCATCTAC TACCATCGGG	12240
AGAGAAGATT GGTTCGCATA CGAAGCTGCC ATGCCGATTG CTTTTTCCTT CTCAGCTGAC	12300
AAATGCCCCA AATTGATGAA GAGAGCCTGA CTTTGCTTAG TAAAATCAAG AACTTCACGG	12360
GAATCATCTG CCATGACAGG TTTGCATCCC AGAGCCAAAA TCCCATTGTC CAGCATCTCA	12420
CAAGAAATCT CATTGGTAAT GCAGTGAATG AGGGAAGTAG AGCCTATAGG AAAGGGATTT	12480
GTAAATTCCT GCATCAGTCT ATCCTTTCAC TAAAGAAATA TCCCTGCACT TTTTAAAGA	12540
ATTCCTGCTT GATTAAAAAT CGAAAGGCAA TAAAGGAAAT CGCTGTACCA ATCAAGGTTG	12600
CTCCGAAAAA TCGAGGCGTG TAGATAAACC AGCTAAGCTT AGCAGCTGAT CCTGTAAAGA	12660
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GAGCAGAATA GTGAAATTTT CGACCGTACT TATAAAGAG ACCTGCTAGA AGGGCTCCAA	12780
AAGTCGCTCC TGTGAGAGCT AAAGGCGGAA TCCCTTGAGT CGTCATACGG ATAAAGGCTG	12840
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CTACACTGGA CATCGGTGCC ATTCCCTCAA TTCGAAAGAT AGGTGTAAGG ACTACATCAA	12960
GGGCAATCAT CATAGATAAA ATGGTTAATT TGTGAACTTG TAATTGGTGC TTTCTCATGC	13020
TTCTATTCTT CTCCTTTTTC TAAAGACTGT AAATCGCTCT TCCATGTCTG GTGTTGGTAG	13080
GCCATTTCCC AAAACTTGGC TTCCATATGA AACTGATGT GGAAGGCATC TAGCATTTTT	13140
TGCTTGCTG TCTCGTCACT TTCTCGATAG AGCTGATTGA CCAGTGTCTC CTCCTCTCTG	13200
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TAATGATAAC AGGTTGGAGC GATTGGATGT TGCTCCATTT CCTGGTCGCT GATTTCCAAT	13440
TCCTTGAAAA ATTGTTGGCG AATAAATAAC TCACCCTCCA CTAAACCCTG AGCATTTTGT	13500
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GAGAAAGCCT TCAGATAGTA GGCATCCTGA ATCAGGTAAT AGCGGAAAAAT GGCAGGTTCT	13620
AAATCCCCCT CTTGTAATTG TAAAATAAAG GGATGATGAA AGGAAGCCTG CCAAGCTTTC	13680
TTGGATAATT CCATCGCAAT ATCTGTAAAT TCCATAATAA CTCCTTTATA AAAATAGACT	13740
GGTTTGAAGC AATAAAAAGA AAAGCAGGTA GATTAATTTT GTTTTTTTAG GAATATAAAA	13800
AGTCCGATAG CTATTCTTCA ACTGTGCATG TTCGTCATAT CCGTGAGCAG ATAGAGCTCT	13860
CAGGTAAAGA TGGCGCCACC TAAAGACTGT CATCAGAACC TTACTGTAAA TCAAGGGCGA	13920
CCAAAAATGT AGTTCTTGAC CACGTAATAG GCAAGCTTCT TTGAGGGACT TGATTTCTTG	13980

CTGAATGAGA GGAAAAGAAT TGAATACCAC AATCAAGGCA TAGGACCAAG AGCGTGATAG	14040
CCCCTTTTGA GCCAAGTACA AGAGAAGCTC TTTTAGTGAA ACAGAGGAAA CAAAGACAAG	14100
GCCGATACAA ACTGTCACAA AGGCCCTCGT TCCAAGCATG ACTGCCTGTG AAGCATCTCC	14160
GTGTAACCTGA ACTGCCCAGT AGTTGGCAAA AGATGGTAAA ATGGCAAGTA TGATCATCCA	14220
AGCTAACATT TTAAATCGAC GGTAAATAGAG CATAAAGAGA ATACAAAATG CGACTACCGA	14280
AAGAGTCAGA GCAATCGAAG GAATGAAAGA TGTTCCTAAG GATAAAATCA GCAAGAAGAG	14340
ACTGATAATC GGTGTCTGGG TTGCTACTTT GACCATACTA TCTCACCTCC CCTTGGGTAT	14400
TGCTACTCTG AGATGTAAGT GGTTCGGTAA TGGTCACTTC TTTCACATGC CGAAGACCTT	14460
GACTAGTCAT CTCAATCCAA TAATCAACCA CAGAAATCAA AGGGTCTAAA CGATGACTAA	14520
TGAGCAGAAA ACTTCTTCCT TGATTCCTCT CCTCCACAAT CCACTTGCAA AAATAATGGC	14580
AGGCTCTATC ATCCAAACCT GCAAAGGTT CATCTAGCAA GATCACGGAA GCCTTACTGG	14640
TCAAGATGGT CAGGAGCTGA AGAATTTTTT GCTGACCACC ACTTAATTGA TAGGGACTCT	14700
TATCGACTGC CTGCTCCAAA TCAAAATATC GTAAAGCTTG AAAAATCCGC TGATTTCTTT	14760
CAGAATCAGG TCCATCTAAT TGAAGCTCCT CTCGCAGACT GACTCGGATA AACTGCTTCT	14820
CAGCTTCCTG AACAAACCCA GTCAGATCAC GATACAAACT CTTTTCTTTT TTCAGGACCG	14880
AACCCTTCCA AGTAATGCTC CCCTTATACT TTTGAAATTG AAGAATAGAC CGAAAGAGGG	14940
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CAGCAATTGA AAAGAGGGGG CGATTACCAA GCTCACCAGT CACACGGTTC ATATGGAATA	15060
GTTCCGGGCT AGAAGCAACT TCCTTTGAAG CAACCTGTGT CATCTCATAG GAAGGGATTT	15120
GAAACACTTC CCTTAGTTTT CCGTCTCTTA GCTCCACCAT ATGGTCGATA TAGGCTTTAT	15180
AGTCAGATAA ATCATGGTCG CACAAAATAA CTGTCTTCCC ATCATAGACC AACTCTTTTA	15240
GAATCTCCAA TATCTCGATT CTGCTCTTGC GGTCAATGGA AGCGAAGGGC TCATCCAAGA	15300
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CCGTCTGGAC ACGTTCGACG ATAGAAAGCT GACTGACCTC GCTCCCATCT ATCAGGACTT	15600
GACCGCTATA GGGAAGAGAA CTAACCTGGG CAATCATTTG AAAGAGGCTG GATTTTCCAG	15660
ACCCACTACT CCCAACTAAC AAGGTAAAGG CTTGCGCATG AAAAGTAAAA TCAAACGGCT	15720

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CAGAGAAGAT TGGGGACTGA ATCGCTCGTA GTTCCAGACC CATCTATGCT TTTCTCCAG	15780
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CAGAAATAAA ACGTACCACA AGCAAGGAAA GGACAAACGG AAGGGAAAAG GCGTAGTAAC	15900
CTAACTTAAT GTATTTCATAG ACAAAGCTAA CAAGCGTAAT CCCAATACTA TTAGCAGTTA	15960
GAGAGAGCCA ACTTTCATAG CGATTCTTAG TTACGATAAA ACCAAATTCA CTTCCCAAAC	16020
CTTGAACAAA GCCAGACAAA AGAGCTCCTA GACCAAATTG GCTACCATAA AGGACTTCAG	16080
CAAGCGCAGC TAGCACTTCT CCAATCGTTG CACTTCCGAC TCTCGGAACA AAGATGGCAG	16140
CAATGGGCGC AGCCATACAC CAGAGACCGA AGAGGATTTC ATTGGCAAAG GCCTGCAAAC	16200
CAAGAGGTGT TAAGAGTAGA CTGAGAATAT TATACACATA TCCTGAACCA ACGAAAACCC	16260
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AATTTGAATT TTCTAATTGA TTTGTTGCA TCTTATTTCA ATCTACTATA TCATCTTCAT	16500
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ATAAGGTTAT ACCACCTTTT AAGGCTTCCT CAACGACTGT ATATAGATTT TTTCTTGGC	17460
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ACTTTAAATG TCCCAGGAAG ATGTCCATTT GGACGTTTTT CTGCTATTTT TCCAGCGATA	17640
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CTACCATTAT GAATCATTAC CACTTCTCCA TTAACAGCAA TGGCATCCAC TTCACCTGTT	17820
ACTACTATTG GAATATTGAA CTTCTCATTT GCTGCTAGAG CAATTTCTGC AATATTATCT	17880
ACGCCCCGAC TATCTACTCC TTTAGATGCC ACATCTATTC CTACTAAAGA GGCAATCTCG	17940
CCAGCATTTT CTCTAATCGC TGCTAGTTTA TAATGTGTTA TTAGATCATC TGCTACTTTT	18000
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TCTGCAATTT TCAGAGCAGC TTGGTATAAT TTCCAATTTT CATCTGTCAA TGTTCCTATG	18120
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TGACCAAAAG ATGGGCATAG TCTGATGAAG CCACCGCCGA ATACATTAGA TCCTGAAAGG	18840
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GCTTTTAAAT AATTCTCCAA CAGTCAAACC TGGCTGAAAT GCATAGTCTT GTGTTTCCAT	19200
ATTTACTTCT CCTCTCTTTA CTTGTTAGTA ATTAATAAAA CACCAAGAAA TATCAAGCAA	19260

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AATCGTAATT CCACTTGATC CTTTTAAAGC ACATCGAGAG CATTTCGAGA GAGCTAACTA	19320
AACAAGCCTA TCCAGTTTAT ATAAACAAAA AACTCCAATT ACAATCAAGA ATTAGAGTTG	19380
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CAGTCTTAAC TGTATCAGGT TCAATGGGTA TTATCTCAGC CTAAAGCACC CCAAATGTCT	19500
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CGAAAAATAT CTTTATATAT AATATATTGA AACTAGAATA GTACACCTCT ACTTATAAAA	19620
CATTGTTAGA AATCGATTTG ACTGTCCTGA TTGATTTGTC CTATTCTTAT TTCATTTTAC	19680
TATAGTTTTC GATAGCAATT TATTCTTCCA ATACACGAAG AAAAACCTCC ACATTCAGTG	19740
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GTTCACGTC CTCACGGCAT TGTGGTCCCT TGACATACAC AGGAAGACCA GAGTATTCAG	20220
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CCTTACTAAA GTAAAATTGA AACCAATGAG GTGTCCCTTG GAGGGCTTCA GAAATCTCTG	20520
GAAGGTCAAC AGTAGAGTAA GAACTGGTTG TATAAAGAGA ACCAAACTCA TGCACACCAC	20580
GCGCAGTCGC CACTTCCCCC TGTTCAATTG CCAATTTATG AGCCGCAACA GGTGCCATAA	20640
TGATTGGAGA AGATAGTTTT TCACCTGCAA ATTCAATCTC TGTACTTGGA TTTTCTACAT	20700
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GCGCCATTGG CTCCAAATCA TAGGTATTGA TGAATCTAC ATGACCTTCT GCATTGCTTG	20880
TTTTGTATGA CATAAATGT CCTCCTTAAT AAGTAAGCGT TTACTTTGTG TATTACAAAA	20940
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TGTCTATGAT AAAATCCTT ATAACGGCAA TAAAAATAG ATATTATCCA AAGAAGATTT	21060

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TGTGAACAA TATCTACCAC TATATCAAAA GGCATTCTTT CTGACCTTGC ATATTGCAGT	21180
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AATCCTTGTT TTGGCGCAAG TAGCGACAGC CTACATTGAA TTGTCACGTA ATACGCCCT	21300
TTTGATTCAA CTCTTCTTC TCTACTTCGG TCTTCCCGA ATCGGGATTG TCCTATCTTC	21360
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CCGAAGTGGG CTGGAAGCCA TCAGTCAAAC CCAGCAGGAG ATTGGCCTCG CTATTGGTCT	21480
GACACCTCTA CAGGTCTTTT ACTATGTGGT TCTTCCGCAA GCAACAGCGG TGGCACTCCC	21540
CTCCTTTAGT GCCAATGTCA TTTTCTTAT CAAGGAAACC TCTGTTTCT CAGCAGTGGC	21600
TTTGGCCGAC CTCATGTACG TCGCCAAGGA TTTGATTGGT CTCTACTATG AGACAGACAT	21660
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CTAATGTTCA ACTTTACTAC CACATCATCA TCCACAAAGT CTTAAGAAGA CTGCTACCGC	22200
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TTGTGGAAGT GACCAAAGTT GGACAACAAA TCATCGATAG CAATCGCCTG ACCATCCCAA	22320
CTGCTTCATT TTGGATTTAT GGAACCATTC TAATCTTATA TTTCGCAGTT TGCTACCCTA	22380
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TAGAAATCAA GGAACAAAA AAATCCTTCG GAGACAATCC CATCCTCAA GGACTTTCTC	22500
TAGAAATCAA AAAAGGGGAA GTTGTGTGCA TCCTAGGGCC ATCTGGTTGT GGGAAAAGTA	22560
CCCTCCTTCG TTGCCTCAAC GGCTTAGAAA GTATTCAAGG TGGAGATATT CTTCTGGATG	22620
GTCAGTCTAT CGTTGAAAAT AAAAAAGATT TTCACCTAGT TCGCCAAAAG ATTGGCATGG	22680
TCTTTCAAAG TTATGAACTC TTTCCCATC TGGATGTCTT ACAAACCTC ATCCTAGGCC	22740
CTATCAAAGC TCAAGGAAGG GACAAGAAAG AAGTAACGGA AGAAGCTTTG CAATTACTAG	22800

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AGCGTGTCGG TTTGCTGGAT AAACAACATA GCTTTGCCCG TCAATTATCT GGTGGACAGA	22860
AGCAACGTGT TGCAATTGTC CGTGCCCTCC TAATGCATCC AGAAATCATC CTTTTTGACG	22920
AGGTGACTGC TTCGCTGGAT CCAGAAATGG TGCCTGAGGT GCTGGAACCT ATCAATGATT	22980
TGGCCCAAGA AGGCCGTACC ATGATTTTAG TAACCCACGA AATGCAGTTT GCCCAAGCCA	23040
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CCTTCTTTAC CAATCCGCAA ACCAAACGAG CCCAGGAATT TTTAAACGTC TTTGACTTTA	23160
GCCAATTCGG CTCATATCTA TAAAGGAGAT TCTTATGAAA CTATTCAAAC CACTCTTAAC	23220
TGTTTTAGCA CTTGCCTTTG CCCTTATCTT TATCACTGCT TGTAGCTCAG GTGGAACGC	23280
TGGTTCATCC TCTGGAAAA CAACTGCCAA AGCTCGCACT ATCGATGAAA TCAAAAAAAG	23340
CGGTGAACTG CGAATCGCCG TGTTTGGAGA TAAAAACCG TTTGGCTACG TTGACAATGA	23400
TGGTCTTAC CAAGGCTACG CTACGATATT GAACTAGGGA ACCAACTAGC TCAAGACCTT	23460
GGTGTCAGG TTAAATACAT TTCAGTCGAT GCTGCCAACC GTGCGGAATA CTTGATTTCA	23520
AACAAGGTAG ATATTACTCT TGCTAACTTT ACAGTAACTG ACGAACGTAA GAAACAAGTT	23580
GATTTTGCCC TTCCATATAT GAAAGTTTCT CTGGGTGTCG TATCACCTAA GACTGGTCTC	23640
ATTACAGACG TCAAACAAC TGAAGGTAAA ACCTTAATTG TCACAAAAGG AACGACTGCT	23700
GAGACTTATT TTGAAAAGAA TCATCCAGAA ATCAAACCTC AAAAATACGA CCAATACAGT	23760
GACTCTTACC AAGCTCTTCT TGACGGACGT GGAGATGCCT TTTCAACTGA CAATACGGAA	23820
GTTCTAGCTT GGGCGCTTGA AAATAAAGGA TTTGAAGTAG GAATTACTTC CCTCGGTGAT	23880
CCCATACCA TTGCGGCAGC AGTTCAAAAA GGCAACCAAG AATTGCTAGA CTTATCAAT	23940
AAAGATATTG AAAAATTAGG CAAGGAAAAC TTCTTCCACA AGGCCTATGA AAAGACACTT	24000
CACCCAACCT ACGGTGACGC TGCTAAAGCA GATGACCTGG TTGTTGAAGG TGGAAAAGTT	24060
GATTAGTCAT TAACTCTTAA AAGGAACTGG ATTTTAAGCT CCAATCCCTT TTTAAGATT	24120
TACCTATAAC ATCCTGAGTC TATCTAAGAT GTTCAATCTG AACACAGTGT ACATACTTTA	24180
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ATCAAAATTG TTGTCCCTTT TTTCACTAGAG AGCTTTCTAA ACAATGTTCT CATATTTTCT	24300
ACACTTGATT TATCCAAGGC ATTATAGGT TCATCTAGTA AAAGAATAGA GGGATTCTCC	24360
ATAATTGCTT GAGCAATCCC TAGCTTTTTT CTCATACCTA GCGAATAAGT TTAACTTTT	24420
TGGTCTTTTT GCTCATATAG ACCAACTATT TTCAGTGAT CATTGATTTC CTGATTACCA	24480
ACTACTCCTC GTATGCTTGC CAAATATTGT AAATTCTTAA AGCCACTATA ATAATTTATA	24540
AAACCAGGTT CTTCAATCAA AGCTCCCAA TTAGCTGGAA TTTTCTCTC AGGAACAATA	24600

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TTTTCCCCAT TGATTAACAC TTCTCCATAA GACGGACTAT ATAAACCAGC TATTAATTTA	24660
AACAATACAC TTTTCCCTGA GCCATTTCGA CCAGTAATTC CTATAATTTT CCCCTGTTTA	24720
CAACTAAAGT TAAGGTTTGT AAAAACACAT GTCTTTTTTA ATTTCAACTC AATATTTT	24780
AATGTAATTA TTTCATTCAT TCTATAAACC TCCTCTTTTG ACGAGTGAAA TAGAAAATGC	24840
TTTGAAAAAG AAAGACTAAA AATAGCAACT GAAGAAATAA ATCTCGTCCT ATATCTCCAT	24900
TCCCTCGATT CAAAATATAA AATAGATAAT TAGTTCGATT TCCTACAAAT AGACCACCAA	24960
ACACAATCAT GAGTAAAAAG AACTAACGC AAGCAAAGTT CG	25002

(2) INFORMATION FOR SEQ ID NO: 49:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 11443 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 49:

CAGGTACGGT GAGGCGCAAC TAAATATAA TTTTCATCTT GATTAGGAAT TTTATCAGTA	60
TTATGATAGT GAGCATTGCC ATTGATGGAC CATAAGAGCA ATACAACTAA TCCACGCAAA	120
TAAGTATAAA ACATGCGATC TCCTTCGATT GTTTTCTTGT TATTATTATA CCTTATCAAA	180
GGAGGGCTGG CAAACTTTTC CCTTGACTAG ATACATATTT AGGATGAAAT TAGAATTCTG	240
TTAAAAAAA TGATATAATA GAATTTATGG ATAAAAATA GATTATGGGA TTAACCCAAA	300
GAGAAGTCAA GGAAAGACAG GCTGAGGGTT TGGTCAATGA CTTTACCGCA TCAGCCAGTA	360
CCAGCACTTG GCAAATCGTT AAACGAAATG TCTTTACCCT TTTTAACGCT TTGAACTTTG	420
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AGCTCAATCT CATGACCAAG GAAAAGGTCA AAACCATCCG TGATGGTCAG GAAGTTGCTC	600
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AAAGTGATTT GGTGCAAAAG GAAGTTGACG GCTTACTTTT GTCAGGAAGT TTCCTAGCCA	780
GTGGGTCAGT TTTATCTCAA GTTCACCATG TCGGTGCAGA CAACTATGCT GCCAAACTCA	840
TGCTTGAGGC TAAGACCGTT AAACCCATCA ACTCCCGTAT CATGAAATCG CTGGACAAGT	900
TGGCTGGTTT TACTGGGAAG ATTATCATTC CCTTTGGTCT GGCTCTCTTG CTGGAAGCCT	960

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TGCTTTTAAA AGGCCTGCCT CTCAAGTCAT CCGTTGTAAA CTCGTCGACA GCTCTTTTGG	1020
GAATGTTGCC TAAGGGAATT GCCCTTTTGA CCATTACTTC GCTCTTGACT GCAGTGATTA	1080
AGTTGGGCTT GAAAAAGGTC TTGGTGCAGG AGATGTACTC TGTGAGACC TTGGCGCGCG	1140
TGGATATGCT CTGTCTGGAC AAGACGGGTA CCATCACCCA AGGAAAGATG CAGGTGGAGG	1200
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ACATGGCCCA TAGTGAGGAT AAGAATCCAA CTGCCCCAAGC CATTGCCAG CGTTTGTGG	1320
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CTGAAGTCCC AGAAGCTAGG GAGGCCTTGG AGAGAGGATC ACGTGTCTTG GTCTTAGCTC	1500
TCAGTCAGGA GAAATTAGAC CATCACAAAC CACAGAAACC ATCTGATATT CAGGCTCTAG	1560
CCTTGCTGGA AATCTTGGAC CCCATTGAG AGGGAGCAGC AGAGACGCTG GACTATCTCC	1620
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TTGCCCAGAA GGCTGGTTT GCGGACTATC ACAGCTATGT AGATTGCTCA AAAATCACCG	1740
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AAAAGAACT CATCATCAA ACGTTGAAAA AAGCGGGACA TACAACGGCT ATGACAGGGG	1860
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CTGTTGAGCA GAATTTCTTC AGAAAATCCA TGCTTCGTGC CCTACCAAGC GCTCTCATGG	2280
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AAATCTCAAC TCTACTCTAT TATCTCTTGG GGTCAATTGG TTTCTTATCC GTATTTAGAG	2400
CCTGCATGCC ATTTACCCTA TGGCGTGTC TCTTGATTGT TTGGTCAGTA GGAGGTTTCC	2460
TAGCCACAGC TCTCTCCCA AGAATTCAAA AACTGCTTGA AATTTCACC TTAACAGAAC	2520
AAACGTTGCC TGTTTATGGT GTCATGATGT TGGTCTTTAC CGTGATTTTC ATCCTGACCA	2580
GTGCTTACCA AGCGAAAAA TAAATCAAAA CCACCAGTGT GAACTGGTGG TTTGTTCTGC	2640
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AAACGGATCT ACTGACTCGA ATAACGTGAG CTGGTCTGCT ACTCTGTCTT CTTGTAATTG	2820
ATTCTGAATA TATTCAGCTA TCACTTTCTG ATTACGGCCT ACCGTATCTA CATAATAGCC	2880
TCTACACCAA AACTTGCGAT TGCCATATTT GTATTTTAAA TTCGCATGCT TATCAAAAAT	2940
CATCAAAC TG CTCTTGCCCT TTAAATAGCC CATAAAGGAC GAAACACTAA GTTTCGGAGG	3000
AATACTGATA AGCATGTGAA TATGGTCTGA ACAAGCATTC GCTTCATGGA TTATTACACC	3060
CTTACGCTCA CATAAGTCAC GTATGATTCT TCCGATACTA GCTTTGTATC TGCCATAAAT	3120
GATTTGACGA CGATATTTGG GTGCAAAAAC AATATGATAT TTACAATTCC ATGTGGTATG	3180
TGATAAACTT TGATTATCCT CTCTCATGAG GTACCTCCTG TATGATATGT TGAGTAGGCG	3240
GAGAAACCAC TTCTATCTTA TCATTTTAGG AGGTTCTTTT TGTTACCACG CTAAAAGCTC	3300
TATGGAACCA CTAGCATAGC TAGTGGTTTT CGGGAGACAA CAAGAAAGAC TGCAATCTGT	3360
GGATTGCAGT TTTTATACG ATGGATCTAT CGTAGATCTG ATGTGCAAGG CCTACGTGCC	3420
GATCATCTAT CGGTGAACCC AAGAGCGACC CTCAAGCCTG CTTGGATTGA GGTAAATAGAT	3480
TCAAATATCT GTAGTTAGAC TATTTGAAGT TTGATGTAAG AAAGAGAAAG CGACAGATTG	3540
AAGTAATTTT AACTCTCTTC TATTGCTAGA ACAAATGGTC GGATAGGTTG GTAGTTTGAA	3600
AATGAAGATG CTATCTATTG TTAAATGGAA CATAGTGTTA TTTATTAGAA AATCGTTTGG	3660
TTTATTTCTT ATCAAATACG AAAAGCAACT TAAATATTTT AACTAAAATA GATGTTATGA	3720
AGAAAAGGTA AAATGATTTT GGCATAGTGA GGTCTCTGTC TATTTGATAT CATATTTTGG	3780
ATAAAAACAA AAATGTCCAT TGCAAAGGAC AAAATGCGAA GTATATTATT TTTTGAAAGC	3840
GATATAATGG ATTCATAAAG GAGGTGTATC GTGTCTAGAA AACAAGAACA AATGGAAACG	3900
TTGTTGCTCC TTTTGCGAGA TAGTAAGGAT TATATATCTG CTAAAGTATT GGGAGAAAAA	3960
TTAAATTGCT CTGATAAAAC GGTTTATCGC CTTGTCAAGG GAATCAACAA AGATTGTCCG	4020
GTAGAAGCAT TCATTTTATC TGAAAAAGGC AGAGGTTTCA AATTAAATCC AAGAAGTTCC	4080
CTCGTGGACG TTGATGGGAA TTTTACAGAG GCTTTTGATC CTGAAGTAAG GCGTGAAAAA	4140
TTACTAGAAC GTCTCTTGT TACTGCTCCT AAGCCACATT CTATTTATGA TTTAGGAGAG	4200
GAATTCTACG TAAGCGAGTC AGTAGTACTA AAAGATCGTC AGATATTACA AGAGAGTCTA	4260
GCAATTTATG GGTAGATTT AAAAATGAGA CAACGAAAGC TTTTATTGA TGGGGATGAG	4320
GCTCAAATTC GTTCAGCCAT TCTAAATCTA CTGCCAATGT TTAATCAGTT GGATTTAGAG	4380
CAAATTACAC AGAATAAGGT TCAGCCTCTT GACGGAGAAC TTGCTCACTT TTGTTTGGGA	4440
TTACTGATTA CACTTGAGAG AGAATTGGGG GTAAACATTC CCTATCCATA TAATATAAAT	4500

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ATTTTCTCTC	ACCTGTATAT	TTTTATCAGT	AGGAATCGTC	GTAGTACTAG	TATTCATGTT	4560
GTAGCACCTT	CAAAACCTAC	TATTGTTGAT	GAGAAAATTT	ACAGTGTCTG	TCAAAAAATT	4620
ATTCAAGAAA	TTGAACAATA	TTTTAGGATG	AAGGTTGATG	CAGTTGAGAT	TGACTATCTT	4680
TATCAATACG	TTGTATCTTC	GAGATTGCAA	AAACCATTTT	CTTCCGGGAA	GCTTCCTTTT	4740
TCTCAGCGAG	TTTTAGATGT	CACTCATTAC	TATTTTAGCC	GTATGTGTAT	GGACAATAGA	4800
GAGATTGAAA	CGACAGATCC	TGACTTTGTT	GACTTGGCGA	GTCATATCAG	TCCCTTACTG	4860
AGGAGATTAG	ATAATAGAGT	ACAGATTAAG	AATAGTCTTT	TATCACAAAT	TCTTTTAACC	4920
TATCCTAATC	TGGTTAAAGA	GTTAACAAC	ATTCTCTAAAG	AAGTGAGTCT	AGTATTTGGT	4980
TTTGCTTCCT	TGAGTCTGGA	CGAGATTGGT	TTTCTAGTCT	TATATTTTGC	ACGGTTTCAA	5040
GAAAAGCGAG	CACGTCCTCT	AAAAACAGTA	GTGATGTGTA	CATCAGGTGT	CGGAACTTCA	5100
GAGCTTTTAC	GAGCAGGATT	AGAAAAGCAA	TTTTCTGAAT	TGGATATTAT	TGATGTAGTT	5160
GCTTATCATC	AATTAGATGA	GCTGATAAAT	CTATATCCAG	ATTTAGATTT	CATTGTGACG	5220
ACGGTAGCTT	TGCAGGAACC	AGCAAGTGT	CCGTTTGTCC	TAGTTAGTGT	TTTTCTAACC	5280
GAGGGTGATA	AACAACGTCT	TCAAGCAAAA	ATTCAGGAGA	TAAACTATGA	ATAATCTTTC	5340
GCTTGTCCTT	ATGGATATAT	CTGTTCAAAA	TCGTCAAGAA	GCCTACAAAG	AATTAGCAAA	5400
TCAAATCAGC	CTTCTTGTTT	CTGAAGATAC	AGAAAAATA	GAAGAGCTTC	TATATTACCG	5460
TGAGAGACAG	GGAAGTATAG	AGGTTGCTAA	AGGTGTTCTT	CTACCACATT	GTGAAGGAAA	5520
CTTTCAACAT	CATGTCTTAG	TGATTACTAG	ATTAAATCA	CCTATCAGAG	AATGGTCGAA	5580
GGATATCCAG	TGTGTTGACC	TTATTATCGG	TTTGGCCATT	GCAGTATCAC	AGGACAAGTC	5640
ATGTATTAAA	ACATTGATGA	GAAGACTAGC	AGATGAATCA	TTCATAAATC	AATTAAAAACA	5700
GTTAACAAAA	GAAGAATTAC	GGGAGATAAT	ATATGGAAAT	CAAAGATATT	CTTAATGTGA	5760
GTCTGATCCA	GACGGATTTA	CAGATGCAGA	GCAAAGAAGA	GGTTTTTGAG	GCATTAGCTC	5820
AACTATTGGT	TGAGACGGGT	TATGTGTCTG	ATAGAGACCA	ATTTATCGAA	GGTCTTTATC	5880
AGAGAGAGGC	AGAAGGACAG	ACCGGTATTG	GGAATTATAT	TGCTATTCCC	CATAGCAAGA	5940
GTTCTGCTGT	GGAGAAGGCG	GGGGTAGTCA	TAGCTATAAA	TCACAATGAG	ATTCCTTGGG	6000
AGACCATTGA	TGGGAAAGGG	GTCAAAGTAA	TTGTACTCTT	TGCAGTTGGT	GATGATACAG	6060
AAGCTGCTAG	GGAGCATTTG	AAGACCTTAT	CACTCTTTGC	TCGAAAACCT	GGTAATGACG	6120
AAGTTGTTGC	CAAATTAGTT	CGGGCTCAGA	CATCTGATGA	TGTGATTGCA	GCTTTTGT	6180
AATAAGAAAA	AATTTTGGAG	GGTATCCGTA	TGAAAATTGT	TGGTGTGCA	GCTTGTA	6240
TGGGAATTGC	CCACACTTAT	ATTGCACAGG	AAAAATTAGA	GAATGCCGCA	AAGGTAGCTG	6300

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GACATGTGAT TCATGTTGAG ACTCAGGGGA CAATAGGGGT AGAAAATGAA TTGAGTCAAG	6360
AGCAGATTGA TGCAGCGGAT GTAGTTATTT TAGCAGTTGA TGTTAAGATT TCTGGTATGG	6420
AACGCTTTGA GGGTAAAAAG ATTATCAAGG TTCCAACAGA AGTGGCAGTC AAATCTCCCA	6480
ATAAACTGAT TGCTAAAGCT GTTGAGATTG TTACGAAATA ACTGAAAATA TTAAAGGAGA	6540
AAATATATGT TGAAACACTT AAACCTAAAA GGTCACCTAT TGACAGCCAT TTCCTATATG	6600
ATTCCAATTG TTTGTGGTGC AGGATTCTTA GTTGCCATTG GTTTAGCAAT GGGGGGTGGT	6660
GTTCTGACG CTCTGTAGC AGGAAAATTC ACTATCTGGG ATGCTTTAGC AACTATGGGT	6720
GGTAAAGCCC TTGGTCTCTT GCCAGTTGTT ATTGCTACAG GTTTGTCTTA CTCGATTGCT	6780
GGTAAGCCAG GGATTGCACC AGGTTTGTGTT GTTGGTCTAA TTGCCAATTC TGTGGTTCA	6840
GGGTTTATCG GTGGTATCTT GGGAGGTAT ATAGCTGGTT TCTTGGTTCA AGCGATTATT	6900
AAAAAGGTCA AAGTACCAA CTGGATTAAA GGTTTAATGC CAACCTTGAT TATTCCTTTT	6960
GTAGCCTCTT TGTAAGTAG TTTGATTATG ATTTATATTA TTGGAGCGCC TATCGCAGCC	7020
TTTACCAACT GGTGACGAG CTTATTACAA AGCTTGGGAA GTGCTTCAAA TGGTTTGATG	7080
GGGGCAGTTA TTGGAATCTT CAGTGCTGTT GACTTTGGTG GCCCACTTAA TAAAACAGTC	7140
TATGCGTTTG TGTTGACTTT ACAGGCTGAA GGTGTGAAAG AACCATTGAC TGCTTTACAA	7200
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AAAAAAAATA TCTATACTCA AGAGGAAATC GAAACATTGA AATCGGCTGT TCCTATGGGG	7320
ATTGTCAATA TTGTTGAAGG TGTAATCCG ATTGTTATGA ATAACCTGGT TCCAGGTCTC	7380
ATTGCAACAG GTATCGGTGG TGCTGTTGGT GGTGCTGTTT CTTTGACAAT GGGTGCTGAT	7440
TCTGCTGTGC CATTTGGTGG AGTGCTTATG TTACCAACCA TGACTCGTCC AGTAGCTGGT	7500
ATTTGTGCCT TGTTAGCTAA CATTGTAGTC ACAGGACTTG TCTACGCGAT TTGAAAAAA	7560
CCAATAAAAC ATGCAGAACC AGTTATGACT GTTGAAGAAG AGATTGATTT GTCAGATATT	7620
GAAATTTTGT AAGAGGGTAA CGATGTCAAG AATTGAATTT TCACCATCTT TGATGACCAT	7680
GGATTTGGAC AAATTCAAAG AGCAGATTAC TTTTGTGAAT GATAAAGTAG CATCTTATCA	7740
TATCGATATT ATGGATGGCC ATTTTGTTC CAATATTACC TTGTCTCCTT GGTTCAATTCA	7800
AGAAGTTCAA AAAATTAGTG ACACACCTTT ATCAGTTCAT CTGATGGTCA CAGACCCAAC	7860
CTTTTGGGTA GATCAAGTTC TCGATTTACA ATGTGAGTAT ATTTGTATTG ATGCTGAAGT	7920
TCTGAATGGT CTTGCTTTTC GTTTGATTGA TAAAATTCAT GATGCAGGTC TAAAGGCTGG	7980
TGTTGTCCTT AATCCTGAAA CACCTGTTTC TACAATCTTT CCCTACATTG ATTTACTTGA	8040

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CAAAGCAACT ATTATGACTG TAGATCCAGG TTTTGCAGGA CAACGCTTTT TGGAGTCTAC	8100
CTTGTATAAA ATCCAAGAAC TCCGTCAGCT TAGAGTTCAG AATGGTTATC ACTACATCAT	8160
TGAGATGGAT GGTTCCTCGA GTCGTAAGAC TTTCAAACAA ATTGATGTGG CAGGACCAGA	8220
TATTTATGTT ATAGGTCGCA GTGGATTATT TGGTTTGGAT GACGATATTG CCAAAGCCTG	8280
GGATATCTGT TCTAGAGATT ACGAAGAAAT GACCGGAAAA ACAATGCCAA TCAAATAATG	8340
GTTTGAGAAG AAATTTATTA GTTAGGAGGA ATATATGTCA CTACAATCAG TTAACGCCAT	8400
TCGTTTCTCT GGCCTAGATG CTATTAACAA ATCTAATTCT GGTCAACCCG GAATTGTCAT	8460
GGGTGCTGCG CCAATGGCTT ATAGCCTATT TACAAAGCAC CTTAGAATTA CACCTGAGCA	8520
GCCAAACTGG ATTAACCGAG ATCGCTTTAT CTGTCTGCG GGTGATGGAT CAATGCTACT	8580
GTATGCTCTC TTGCATTTAA CAGGGTATAA GGATGTATCC ATGGACGAGA TTAATAATTT	8640
CCGGCAATGG GGATCTAAGA CACCTGGTCA TCCTGAAGTG ACGCATACGT CTGGTGTGGA	8700
TGCGACATCT GGTCCGCTTG GTCAGGGGAT TTCTACTGCC GTTGGTTTCG CCCAAGCAGA	8760
GCGTTTTTTA GCTGCTAAGT ACAACAAAGA TGGTTTCCCT ATTTTGTACC ATTATACTTA	8820
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AGGTCATCAA GCTTTAGATA AGCTTATCGT CCTCTACGAC TCCAACGACA TCTGCTTGGA	8940
TGGTGAGACC AAAGATACTT TCTCTGAAAA TGTTCCGCTC CGTTACGATG CTTATGGTTG	9000
GCATACAGTT CTGGTAGAAG ATGGAACAGA TTTAGCAGCA ATTTCTACAG CAATTGAGAC	9060
GGCCAAGTTT TCTGGTAAAC CGAGTTTGAT TGAAGTGAAA ACGGTAATTG GTTACGGCTC	9120
ACCCAATAAA AGTGGTACAA ATGCTGTTCA TGGTGACCA CTAGGAGCAG AAGAAACAGG	9180
AGCAACTCGT AAGTTTTTGG GATGGGATTA CGATCCATTT GAAGTACCAG AGGAAGTATA	9240
TTCTGATTC AAGACAAATG TAGCGGATCG TGGTCAGGAG GCATACGATG CTTGGGCTAG	9300
TTTGGTGTCT GATTACAAGG TTGCTTATCC CGAAGTTGCT AGTGAGATTG ACGCTATTGT	9360
AGCTGGAAAA TCCCCTGTAA CCATTACTGA AAAAGACTTC CCTGTCTATG AGAATGGCTT	9420
CTCTCAAGCA ACTCGTAATT CGTCCCAAGA TGCTATTAAT ACAGCAGCAG TTTTACCAAC	9480
CTTCTTAGGT GGATCGGCAG ACTTAGCTCA CTCTAACATG ACCTACATCA AGGCAGATGG	9540
CTTACAAGAT AAATATAATC CATTAAACCG CAATATTCAG TTTGGGGTAC GTGAATTTGC	9600
CATGGGAACA ATCCTCAATG GAATGGCTCT TCATGGTGGT TTACGAGTTT ATGGCGGAAC	9660
CTTCTTTGTT TTCTCTGACT ACGTCAAAGC TGCTATTCGG CTATCAGCCA TTCAGGAGTT	9720
GCCTGTAAT TATGTCTTTA CCCATGATTC AATTGCCGTT GGTGAAGATG GTCCAACTCA	9780
TGAACCAGTT GAACATTTGG CAGGTTTACG CTCAATGCCA AACTTGACTG TTATCCGTCC	9840

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AGCGGATGCC CGTGAACTC AAGCGGCTTG GCATCATGCC TTGACCAGTA CCACCACTCC	9900
AACTGTCATT GTCTTAACCC GTCAAACTT GGTAGTTGAA GAAGGGACAG ACTTTGGTAA	9960
GGTCGCTAAA GGAGCCTACG TCGTGTATGA TACCCCGGGA TTTGATACTA TTATCATTGC	10020
TACAGGATCT GAGGTCAATC TAGCTATCAA AGCTGCTAAG GAATTGGTTT TACAAGGTGG	10080
TAAAGTACGT GTGGTATCTA TGCCCTCAAC CGAACTATTT GATGCTCAAG ATGCTACCTA	10140
CAAGGAAGAC ATTTTACCAT CTAAGACTCG TCGTCGTGTG GCCATTGAAA TGGCAGCGAC	10200
CCAAAGTTGG TACAAGTATG TTGGTTTGGG TGGCGCGGTC ATCGGTATTG ACATCTTCGG	10260
TGCGTCTGCC CCAGCTCAGA CTGTGATTGA TAATTATGGA TTTACGGTAG AGAATATCGT	10320
TGCTCAAGTT AAGTCCCTAT AGAAACCAAT TACAATGAAG ATACAGCTGT TGTCAGACTA	10380
GCAGATGTAG TGATAGACAC TAATCAGATG ATTGGTTATT TAAAACTGT AATGAAAATG	10440
TAATAATTTA TCTACGAAAG TTATAGTAGA TAGTATACAC AATAGAGTAT ACCCTGAAAC	10500
GGTTGCGAAG TACGCTAATC ACTTTGCTAC TGATCTAGAT AGTTTCTTTA ATCAATAAAC	10560
ACAGCATCCA CAGATTGACT TAGGATATTG TAAGTTTTTT GAAAGCTAGA GAGAAGGTCT	10620
CTAAAATTAA AAAACGCATA GTATAGGATG TTGAAATGAT GAACTGCACC CCAAAGTTA	10680
GACAGAAAAA AATCTAACTT TTGGGGTGT TTTATTATGA AATTAECTTA TGATGATAAA	10740
GTTCAGTTCT ATGAACTTAG AAAACAAGGA TATATCTTAG AGAAGCTTTC AAATAAATT	10800
GGGATAAATA ATTCTAATCT TAGGTACATG ATTAAATTGA TTGATCGTTA CGGAATAGAG	10860
TTCTGCAAAA AAGGGAAAAA TCGTTACTAT TCTCTGATT TAAAACAAGA AATGATTCAT	10920
AAAGTCTGAC ATGAAGGCTG GACTAAAGAT AGAGTTTCTC TTGAATACGG TCTCCCAAGT	10980
CGTACGATAC TTCTTAACTG GCTAGCACAA TACAGGAAAA ACGGGTATAC TATTGTTGAG	11040
AAAACAAAAG GGAGAGTACC TGAGAGCGGA GAATGCCATC CTAaaaaaAGT TAAGAGAACT	11100
CCGATTGAAG GAGGAAAAAG AGAAATAAGA AAGACAGAAA TTGTTCAAGA ATTAATGACT	11160
GAGTTTTCGT TAGATCTTCT TCTAAAAGCC ATTAACTAG CTCGTTGGAC CTACTACTAT	11220
CACTTGAAAC AGCTAGATAA ACCAGATAAG GACCAAGAGC TTAAAGCTGA AATTCAATCC	11280
ATCTTTATCG AACACAAGGG AGATTATGCT TATCGCCGGG TTCATTTAGA ACTAAGAAAT	11340
CGTGCTTATC TGGTAAATCA TAAAAGAGTT CAAGGCTTGA TGAAAGTACT CAATTTACAA	11400
GCTAGAATGC GACAGnAACG AAAATATTCT TCTCATAAAG GAG	11443

(2) INFORMATION FOR SEQ ID NO: 50:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 5338 base pairs

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(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 50:

CCAATTACAT TATATTATCA AAATCGTCGA AACTGGCTCC ATGAATGAGG CAGCCAAGCA	60
ACTCTTTATC ACTCAGCCAA GTCTCTCCAA TGCAGTGC GAATTGGAAA ATGAAATGGG	120
CATGAGATC TTTATCCGCA ATCCCAAGGG AATCACCTTG ACCCGTGATG GCATGGAGTT	180
TCTCTCTTAT GCCCGTCAGG TTGTCGAGCA GACCCAGCTT CTGGAGGAAC GCTATAAAAA	240
TCCTGTGCGC CACCGCGAAC TCTTTAGCGT TTCGTCTCAA CACTATGCCT TTGTGGTCAA	300
TGCCTTTGTC TCTTTGCTCA AGAAAAGCGA TATGGAGAAA TACGAACTCT TCCTTCGTGA	360
AACTCGGACT TGGGAGATTA TCGACGACGT CAAGAACTTC CGCAGTGAGG TCGGGGTCCT	420
CTTCTTAAAC AGTTACAACC GTGATGTTTT AACCAAGATG CTGGATGACA ATCACCTGCT	480
AGCCCACCAT CTCTTCACAG CGCAACCGCA TATCTTTGTC AGCAAGACCA ACCCTCTGGC	540
AAAGAAAGAC AAGGTGAAAC TGTCTGATTT GGAGAATTTT CCTTACCTCA GCTATGACCA	600
AGGGACGCAC AACTCCTTCT ACTTTTCAGA AGAGATTCTT TCTCAAGAAC ACCACAAGAA	660
ATCCATTGTG GTCAGTGACC GTGCCACCTT CTTTAATCTC TTGATTGGTT TGGATGGTTA	720
TACCATTCGCG ACAGGGATTT TGAACAGCAA CCTAAACGGA GACAATATCG TTTCTATCCC	780
ACTGGATATT GATGACCCGA TCGAGCTGGT CTATATCCAG CATGAGAAAA CCAGCCTATC	840
TAAGATGGGC GAACGCTTTA TAGACTATCT CCTAGAAGAA GTTCAGTTTG ATAGTTGAGA	900
AATGATAAGA ACCAATATGT AGGCTAGCAA CAACCTGCAC ATTGGTTCTT TTTACTTATA	960
ATTAAAAGTT TCCCCTGCCA ACTTATCAGC TAGCTTGGGA AAGAGAGTAT AAAACTTATG	1020
GGCTAGGTTT AACAAAATCG GGAGATTGAG TTCTCGTTTG TTTTTCCTA TAATCTTGAC	1080
AATCTTTTTA GCCACTGCAT CTGGTTCTAG CAGGAAGCGA TCAACCGATT TAAGATAAGT	1140
TCCATCTGGG TCGGCTTGGT CGAAAAATCC TGTACGGATT GGTCTTGAT TGACTGTTGT	1200
CACATAGACT CCATAGGGCA TAAGTTCGAG TCGCAGAGCA TTTGAAAAAC CAATAGCCGC	1260
AAACTTGGTC GCTGAGTAAA GACTAGACTT GCCAGTAGCT ATTAGACCTG CCATGCTGAC	1320
GATGTTGATG ATATGCCCTT TGCTGCTTTC CTTTCATACG GCCGCAAGGT GACGAGACAG	1380
ATTCATCAGG GCAAAGGTAT TGACCTCAA CATCTGGTGA ATATCTTTAT CAGCAATCTG	1440
GTCAAATCCC TCAAAAATCC CGTAACCAGC GTTGTTAATC AAGACATCAA TCTTGCCATA	1500
GCGGAGATAA AGATCAGTTA CCAGAGCTTC TAGGGCTGAA TCGTCGGTAA TATCAATTTT	1560

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AATCAATCTCT GCATGGGAAT AATTTCCGTA GAGTTGGGCT AATTTTTCCT TATTTCTACC	1620
AAGCAAGATG AGTTGGTCAT TGGGCAGGAG TTTGACCATT TCTTGAGCTA GACCACCGCT	1680
AGCTCCGGTA ATGAGAATAG TAGGCATACT TATCCTTTCT GTGACTGCTA GATTTCCACT	1740
TCTTCCAAGT CTTTGACCAC ATGGACATTT TCAAAAATTG TGGCAGCGTC TTTCTTGAGT	1800
TTGCTAATAT CTTTGTAGAG GAAACGGGCA CTGATATGGT TGAGTAGGAG GCGTTTGGA	1860
CCTGCTTCTA CCGCTACTTG TGCAGCTTGC ATATTAGTTG AGTGACCATG GTTACGAGCA	1920
ATTTTTTCAT CACCCTTGCC ATAAGTGGAC TCATGAACTA GGACATCTGC ATTGACAGCC	1980
AGACGCACAC TGGCACCCGT TTTTCGAGTG TCTCCTAAAA TAGTGATAAT CTTACCTGGA	2040
CGTGGCGCTG AGATATAGTC TGCTGCCTTG ATTTCAAGTC CGTCTTCCAA AACAGATCC	2100
TGGCCGTTTT TGATTTTACC AAAAAGCGGG CCGAACGGAA CACCAGCAGC CTTGAGTTTT	2160
TCAGCATCCA GCGTCCCTTC TAGATCCTTT TGATGACAC GATAGCCAAC ACAGAAAATA	2220
GTGTGGTCCA GCTCCTCTGC ATACACAGTG AATTATCGG TTTCAAGAAT TTTACCCAGA	2280
GAATCTTGGT CAAACTCATG GAAATGAATG CGGTAGGGCA GACGAGAACC TGACACACGA	2340
AGGCTGGTTA AGACAAATGA CTTGATTCCT TGAGGTCCGT AGATTTCCTAA ATCTGTCTGC	2400
TCTTCATTGG CCTGAAAGGC ACGGCTAGAA AGGAAACCTG GCAAACCAAA AATGTGGTCT	2460
CCATGCAGAT GGGTAATAAA GATTTTGCTG ACCTTACGTG GTCGAATTGT GGTTTCCAGA	2520
ATGCGATTTT GCGTACCTTC TCCACAGTCA AAGAGCCAAA CTTCTGTTAAT CTCATCCAAA	2580
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AAAAATTGAA TATCCATTCG ATACTTTCTA ATTAATCAAT ATATAACATG GCTGTGCGGT	2700
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GGCTGTAGCC TTTGAGACGT TTTGACCAT CAGCCAATCT TTCCAATCA GTCAAAGCTG	2820
TGAGACTTTC TAGGCTGATA ACTTCCTCGT CTTGACAGG CTTTATGTAA ATCTTACCAG	2880
ACTCTTCAAA GACTAATTGA TGGGGGAAAA TTGCGCAAT TTCAAAGAGC AAGTCATCCG	2940
AGATTTTCTC CTCATTTTCA AAGAAAATCC GACCAAGGCC GTCACCTCTCA TAACAAAAAC	3000
CAAAGGATTT ACCAGACAGA TTAAGCCGAA TAAAAGGCTT ATTTTCTAGG GTGAAACTTG	3060
GCTCAGTATT GTAAAGATTC AGTTCCTGAC TGAGTTCTGC AAAATAATCC GTCGCAGCCT	3120
GAGGACTCTT TTTCTGATAG AGTTCTGCAA AGTAGGCATT AACAACTT GCGGAGGTG	3180
TAATAAGTGT TAACTGCTCC TGATCTGTTT TACCAGCTAG AAGCTGATCC AGATAGACCT	3240
TGTCCAGACT TGTATAACCT CCATACTTTA GAGCCAAAGT TTTAATATCA GTCATAAAAT	3300

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TCTTCTAACC TCCATTTATT TTTCTCGGAA ATGTAGCCTG TAATCACTTC GCCGTCTTCC	3360
TGATAATCAC GTTCTTCCAG AATTGCAACA CTCTCTAAAT CATGAATCTT GTAGGACTTT	3420
GAAAAAGGCA CTCGCAGGGT AAATGCTTCA AAAATTTCTT TAATCTTATC TAGCAATAAT	3480
GCTTGCAAGT TTTCACGACT GTCCTCAGAC TTGGCAGAAA TGAGGGTATA TGGCGTTTGG	3540
GTAGGCGTGA AATCCTCCAC CAAATCCGCT TTATTATAAA GCGTCAAGTG AGGAATATCT	3600
TCCATGTCCA GGTCTTTCAT GATGGAGAGA ACCGTTTTTT CATGCTCCTC GTGGTAAGGA	3660
TTGCTAGCAT CGATAACATG AACCAGAAGG TCCACATGCT TGCTTTCTTC CAAGGTGAC	3720
TTGAAACTGG ACACCAACTC TGTCGGCAAA TCTTGGATAA AGCCAACGGT ATCTGTCAAA	3780
GTTACTTGA GATTGCCTCC CAGATGAATA CTCTTGGTTG TCGCATCCAG AGTCGCAAAG	3840
AGCTCATCTG CTTCACTACTG GGTCTTACTG GTCAAGATGT TCATGATAGT TGATTTCCTCA	3900
GCATTAGTAT AACCAATCAA ACCAATCTTA AAAGTGCTAG ACTCCAAACG TTTTCTCTG	3960
ACAGTCGCAC GATTTTCTC AACCACCTTG AGCTGGCGCT CGATATCCGT GATTTGATTG	4020
CGAACGCTAC GACGGTTCAG CTCCAGCTGG CTTTCACCAG GACCACGGGA ACCAATTCCC	4080
CCTgCCTGAC GGCTGAGCAT AATCCCCTGA CCAACCAAGC GAGGCAAAAG GTATTTGAGT	4140
TGGGCTAGGT GGACTTGGAG CTTCCCTTCA TGGCTTCGAG CCCGCATGGC AAAGATATCC	4200
AAAATCAACT GCATACGGTC AATGACCTTA ACACCGAGAA CTTCTCTAG ATTGACATTC	4260
TGCCTTGGGG TCAGACGATT GTTGACGATG ACAGTAGTGA TTTCTTCTGC ATCCACCATA	4320
AGCGCAATCT CTTCCAACCT ACCAGAGCCG ACGAAGGTCT TGGAATCATA TTTTTCACGT	4380
TTTTGTCTGT AGCTATCTAC AACGACTGCC CCTGCCGTTT TCGCTAAACT AGCCAATTCT	4440
TCCATGGAGA GGTCAAAACT GTCCATACCC TGCAATTCCA CACCAATCAG CAGGACTCGC	4500
TCCTCTTTTT TCTCCGTTTC AATCATCTAA AAACCTCTCT ATCTGGCTTA AAATGCGGTC	4560
TTGTACACCA GATTCTCCAA TCTGATAAAA GGTGACCTGC ATGCGATTAC GGAACCAGGT	4620
CAGCTGACGC TTGGCAAAAC GACGAGTCGC CTGTTTAAGA CTCTCACTAG CTTCTCTCAA	4680
GGTCTGCTCT CCACGGAAAT AAGGAAAGAG TTCTTTATAG CCAATTCCTT TAGCAGCCTG	4740
TACATTAGGG GAATGGTCAA ACAGCCACTT GGCCTCATCC AAAAGCCCAG CCTCAAACAT	4800
CAAATCCACT CGGTGGTTGA TACGCTCATA AAGTTGACTA CGTTCATCAT CCAAGCAGAT	4860
AATCAGCGGT TCATACAAGG TCTCTTGATT TTCCAAATCC TGACCAAAAT GGGCAATTTC	4920
TAAGGCACGC ATAGCACGAC GACGATTAAA CTGGGGAATC TCAAGGCCTG CTTGATCCAC	4980
CAAATGGGCT AATTCCTCAT CTGAATATGG CTCCAAACTA GCTCGATAAG CTAAATCTC	5040
CTCATGAGGA GTCTCCCCAC CTAGGTGGTA ACCTTCTAGC AAGCTCTGGA TATAAAGTCC	5100

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AGTCCCACCG GCGATAATGG CTAGCTTGCC ACGGTTGTGA ATACCCTCAA TAGTCATCTT	5160
AGCTTCTGAA ACAAATCAA AAGCCGAGTA AGACTCGGT ATCTCTCTAA CATCGATTAA	5220
ATGATGAGGA ACAGCTGCCT GCTCTTCTGG ACTAGCCTTG GCCGTCCCAA TATCAAGTCC	5280
TCGATAGACT TGCTGGCTAT CTCCACTAAC CACTTCGCCA TTAACGCT TTGCGGGG	5338

(2) INFORMATION FOR SEQ ID NO: 51:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 19446 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 51:

CGGAAACCCA TCTAGTCTCC ATCGTTTGGG AGACCAAGCA ACACGAATCT TAGATGCTTC	60
TCGCCAACAG ATTGCAGATT TAATCGGTAA GAAAAGCGAT GAAATCTTCT TTACCTCGGG	120
TGGAACAGAA GGGGATAACT GGCTTATCAA GGGTGTGGCC TTTGAAAAAG CTCAGTTTGG	180
CAAGCACATC ATTTGTTTTCAG CCATTGAACA TCCAGCAGTC AAAGAGTCAG CCCTCTGGTT	240
GAAAAGTCAA GGATTGAAG TGGATTTTGC TCCAGTTGAT AAGAAAGGCT TGGTCGATGT	300
TGAGGCGTTA CAGGTTTGAT ACGGCATGAT ACAATCCTCG TTTCCATCAT GGCTGTGAAC	360
AATGAAATCG GCTCTATCCA ACCTATTGAG GCTATTTTTCAG AATTCTTGGC AGACAAGCCG	420
ACTATTTCTT TCCACGTTGA TGCGGTTTCAG GCGCTTGCCA AAATTCGAC TGAAAAGTAT	480
CTGACAGAAC GGGTGGATTG CGCGACTTTC TCTAGTCACA AGTCCACGG GGTTCGAGGT	540
GTTGGCTTTG TCTATATCAA ATCTGGCAAG AAGATTACAC CTCTTCTTAC AGGTGGTGGC	600
CAGGAGCGAG ATTATCGTTC GACAACTGAA AATGTGGCAG GGATTGCAGC GACAGCCAAG	660
GCCCTCCGTT TGTCTATGGA AAAGCTAGAT ATCTTTAGGA GCAAGACTGG GCAGATGAAG	720
GCAGTGATTC GCCAAGCTCT TCTGAACTAT CCGGATATTT TTGTCTTTTC AGATGAGGAA	780
AACTTTGCAC CTCATATTCT GACTTTTGGG ATCAAAGGTG TTCGAGGTGA AGTCATCGTT	840
CACGCCTTTG AAGACTATGA TATTTTCATC TCAACAACCT CAGCTTGTTT ATCTAAGGCA	900
GGAAAACCAG CCGGTACCTT GATTGCCATG GGAGTGGACA AAGATAAGGC CAAGTCAGCT	960
GTGCGTCTTA GCCTAGACTT GGAAAATGAT ATGAGTCAGG TCGAGCAGTT TTTGACCAAG	1020
TTAAAATTGA TTTACAATCA AACTAGAAAA GTAAGATAGG AGCATTCATG CAGTATTCAG	1080
AAATTATGAT TCGCTACGGA GAGTTGTCAA CCAAGGGTAA AAACCGTATG CGTTTCATCA	1140

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ATAAACTTCG TAATAATATT TCGGACGTTT TGTCTATCTA TACCCAAGTT AAGGTAACAG	1200
CAGATCGCGA CCGTGCCAC GCTTACCTCA ATGGAGCTGA TTACACAGCA GTTGCAGAAT	1260
CTCTCAAACA AGTTTTTGA ATTCAAAAC TTTCTCCTGT TTATAAGGTT GAAAAATCTG	1320
TAGAAGTTTT GAAGTCTTCT GTCCAAGAGA TTATGCGGA CATCTACAAG GAAGGTATGA	1380
CCTTTAAGAT TTCTAGCAAG CGTAGCGACC ACAACTTTGA ACTTGATAGT CGTGAACCTCA	1440
ACCAAACACT TGGAGGGGCT GTATTGGAAG CCATTCCAAA TGTGCAAGTT CAAATGAAAA	1500
GTCTGACAT CAATCTTCAG GTGGAGATTC GTGAAGAAGC AGCCTATCTT TCTTATGAAA	1560
CCATTCGTGG GGCTGGTGGT TTGCCAGTTG GAACTTCAGG TAAAGGGATG CTCATGTTGT	1620
CAGGAGGGAT TGAATCACCT GTAGCAGGTT ATCTTGCTCT TAAGCGTGGG GTGGATATCG	1680
AGGCAGTTCA CTTTGCTAGT CCACCATATA CTAGTCTGG TGCCTCAAG AAAGCGCAGG	1740
ACTTGACCCG TAAATGACC AAGTTGGCG GAAATATCCA GTTTATAGAG GTGCCTTTCA	1800
CAGAGATTCA AGAGGAAATC AAAGCCAAAG CGCCAGAAGC TTATTTGATG ACTCTAACTC	1860
GTGCTTTAT GATGCGGATT ACTGACCGTA TTCGTGAGGT ACGAAATGGT TTGGTTATCA	1920
TCAATGGGGA AAGTCTAGGT CAAGTAGCCA GCCAAACCCT TGAAAGTATG AAGGCTATCA	1980
ATGCTGTTAC CAACACTCCC ATCATTCGTC CTGTGGTTAC CATGGACAAG TTGGAAATCA	2040
TTGACATCGC CCAGGAAATC GATACCTTTG ACATTTCAAT CCAACCGTTT GAAGACTGTT	2100
GTACCATTTT TGCACCAGAT CGTCCAAAA CAAATCCTAA AATTAAGAAT GCGGAGCAGT	2160
ACGAAGCGCG TATGGATGTT GAAGGCTTGG TTGAGCGAGC AGTGGCTGGA ATCATGATTA	2220
CTGAAATCAC ACCTCAAGCC GAAAAAGATG AAGTTGATGA CTTGATTGAC AATCTGCTCT	2280
AATTCAGAAA ATCCAAAAGA ATAGCGAAAA TCAGTAAAAA AAGTTAGTTT TTTCTCTAAA	2340
AACAGGTAAG AACTAACTT TTTTATTTT TATGATATAA TGATATAAAA TTTTGAATAT	2400
AGAGAGTTTT CTGACAATGA ATCAATCCTA CTTTATCTA AAAATGAAAG AACACAACT	2460
CAAGGTTCTT TATACAGGTA AGGAGCGCCG TGTACGTATT CTTCTTCCTA AAGATTATGA	2520
GAAAGATACA GACCGTTCCT ATCCTGTTGT ATACTTTCAT GACGGGCAAA ATGTTTTTAA	2580
TAGCAAAGAG TCTTTCATTG GACATTCATG GAAGATTATC CCAGCTATCA AACGAAATCC	2640
GGATATCAGT CGCATGATTG TCGTTGCTAT TGACAATGAT GGTATGGGGC GGATGAATGA	2700
GTATGCGGCT TGGAAAGTCC AAGAATCTCC TATCCAGGG CAGCAGTTTG GTGGTAAGGG	2760
TGTGGAGTAT GCTGAGTTG TCATGGAGGT GGTCAAGCCT TTTATCGATG AGACCTATCG	2820
TACAAAAGCA GACTGCCAGC ATACGGCTAT GATTGGTTCC TCACTAGGAG GCAATATTAC	2880
CCAGTTTATC GGTGGAAT ACCAAGACCA AATTGGTGC TTGGGCGTTT TTTCATCTGC	2940

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AAACTGGCTC CACCAAGAAG CCTTTAACCG CTATTTTCGAG TGCCAGAAAC TATCGCCTGA	3000
CCAGCGCATC TTCATCTATG TAGGAACAGA AGAAGCAGAT GATACAGACA AGACCTTGAT	3060
GGATGGCAAT ATCAAACAAG CCTATATCGA CTCGTCGCTT TGCTATTACC ATGATTTGAT	3120
AGCAGGGGGA GTACATCTGG ATAATCTTGT GCTAAAAGTT CAGTCTGGTG CCATCCATAG	3180
TGAAATCCCT TGGTCAGAAA ATCTACCAGA TTGTCTGAGA TTTTTTGCAG AAAAAATGGTA	3240
AGTTAAGAAA GGAAAAAAGG AAATGCATAT TGAACATCTT AGCCACTGGA GTGGTCATCT	3300
TAACCGTGAA ATGTACCTTA ACCGTTATGG ACATGGTGGG ATTCCAGTTG TGGTCTTTGC	3360
TTCATCAGGT GGTAGTCACA ACGAATACTA TGATTTTGGC ATGATTGATG CCTGTGCTTC	3420
CTTTATCGAG GAAGGCCTTG TCCAGTTCTT TACCCTATCT AGTTTGGATA GTGAGAGCTG	3480
GTTGGCTACT TGGAAAAATG CTCATGACCA AGCGGAAATG CACCGTGCCT ACGAACGTTA	3540
TGTGATTGAG GAGGCCATTC TTTTATCAAG CACAAGACAG GTTGGTTTGA TGGCATGATG	3600
ACGACAGGTT GCTCTATGGG AGCCTATCAT GCACTCAATT TCTTCCTCCA GCATCCAGAT	3660
GTCTTTACCA AAGTGATTGC TCTCAGTGGT GTTTACGACG CACGTTTCTT TGTGGTGAT	3720
TACTACAACG ATGATGCTAT TTACCAAAAC TCGCCAGTAG ATTATATTTG GAACCAAAAC	3780
GACGGCTGGT TTATTGACCG TTACCGTCAG GCAGAGATTG TGCTGTGTAC GGGGCTTGGA	3840
GCCTGGGAAC AAGATGGTTT GCCATCCTTT TACAAGCTCA AAGAAGCCTT TGACAAGAAA	3900
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CGTAAACAAA TGCCTTATTT CCTCGGTAAT CTCTATTAT AAAAGGAGTT ACCTATGAAT	4020
TACCTTGTTA TTTCTCCCTA CTATCCACAA AACTTTCAAC AGTTTACCAT CGAACTAGCT	4080
AATAAAGGCA TCACAGTCTT GGGAAATTGGT CAAGAGTCTT ACGAGCAATT GGATGAGCCC	4140
TTGCGCAATA GCTTGACCGA GTATTTTCGT GTTGATAATC TTGAGAACAT AGATGAAGTC	4200
AAACGTGCAG TTGCTTTTCT CTTTTATAAA CATGGTCCAA TTGGCCGCAT CGAGTCTCAC	4260
AATGAATACT GGCTTGAGCT AGACGCAACA CTCAGAGAAC AATTCAATGT TTTTGGTGCC	4320
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GTGAAAGAAA TCGTCTTCC AATGATTGCC AAACCTGATA ATGGAGTGGG AGCAGCCGCA	4500
ACCTTTAAAC TTGAGACAGA AGACGATATC AATCACTTCA AGCAAGAATG GGACCATTCA	4560
ACCCTTTATT TCTTTGAAAA ATTTGTCACT TCCAGCGAAA TCTGTACCTT TGACGGGCTC	4620
GTGGACAAGG ATGGAAAGAT TGTCTTCTCA ACAACCTTTG ACTACGCCTA TACACCGCTT	4680

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GACCTCATGA TTTATAAGAT GGACAATTCT TATTATGTGC TCAAGGATAT GGATCCTAAA	4740
CTGCGCAAGT ATGGGGAAGC AATTGTCAAA GAATTGCGTA TGAAAGAACG GTTTTCCAT	4800
ATTGAGTTCT TCCGTGAGGG GGACGATTAT ATTACCATCG AGTACAATAA CCGCCCTGCA	4860
GGTGGTTTTA CCATTGATGT TTATAACTTT GCTCATTCCT TGGACCTTTA TCGTGGCTAT	4920
GCAGCTATTG TCGCAGGAGA GGAGTTCCCG GCGTCAGACT TTGAAACTCA GTATTGTTTG	4980
GCTACTTCTC GCCGTGCAAA TGCTCACTAT GTTTATTTCAG AAGAGGATTT GCTTGCCAAA	5040
TATAGCCAGC AGTTCAAGGT TAAAAAAGTC ATGCCAGCTG CCTTCGCGGA ACTTCAAGGA	5100
GATTACCTGT ATATGCTGAC CACTCCGAGT CGACAAGAAA TGGAGCAGAT GATTGCAGAT	5160
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ATAATGACAA ACAAAGTATT ACTGATATCG GAGATATCTA TGAATATCTG TTATCAAAAT	6180
TGTCGACCGC AGGTAAAAAT GGACAGTTCC GTACACCTCG TCACATCATC GATATGATGG	6240
TTGAGTTGAT GCAACCGACT ATCAAAGATA TCATCTCAGA TCCCGCTATG GGTTCTGCTG	6300
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CAGATAATAT CAATCATTTT CATAATCAGA TGTTCATGG AAATGATACG GATACGACTA	6420
TGTTGAGACT TGGGCGGATG AACATGATGC TACATGGAGT AGAAAATCCA CAAATCAGTT	6480

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ACCTTGACTC GCTGTCTCAA GATAATGAAG AAGCCGATAA ATATACTTTG GTTTTAGCAA	6540
ATCCTCCTTT TAAGGGCTCA CTTGACTACA ATTCAACCTC TAATGACCTT CTTGCAACCG	6600
TAAAAACCAA AAAAACAGAA TTACTCTTTC TTTCTCTTTT CTTGCGAACT TTA AAC CAG	6660
GTGGACGAGC AGCAGTTATC GTACCTGATG GTGTCCTTTT TGGTTCGTCT AAAGCTCATA	6720
AAGGAATTCG TCAGGAAATT GTAGAGAATC ATAAGCTTGA TGCTGTAATC TCAATGCCTA	6780
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TAGATGAACT AAACCTGCTC GTCAAATCCC GATTTAACGA GATGTTTGGG GAAAATAAAA	7740
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TAATATTACG TCCCAAGACA CCAATCTAA ATCAGAAAAT TATTATCCAT GTTTTAAGGA	8100
ATAATAATTA TAGTCGAGTG ATATCAGGAA GTGCTCAGCC TCAGTTACCA ATTACAAAAT	8160
TAAAAAAAAT ACTTCTCCCC CTCCCCCAC TAGCCCTCCA AAATGAGTTC GCAGACTTTG	8220

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GCTTGAAATT TAGTATAATA TAGCTAAACT ATTTGTTTAA AGTGAGAAAA AAATGGGAAA	8340
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TGAGAATATG ATTGCTACAT CAACTGTGGC TACTGCCTTT ATGGCGCGTC GTGCTTTAGA	8460
GCAGGCTGTC CATTTGGATAT ATAGTCACGA TTCATATTTA GAAGCTCCCT ATCGTGCTAC	8520
TCTATCTTCT TTAGTATGGG ATGATGATTT TAGGGATATC GTAGATTCTG AACTCCACAA	8580
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AAAACGTGAG ACTGCAGCGC AACGGCAAGA TGTGCCTTTC CATATTGATC AATTATCTGA	8940
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AGCCTCTGTC AATCCAGAAG TAGGGGAAGT ACAGGTCAA GAATATGCTG AAGCTTTGGA	9180
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TGATGGTCCG AACCGCCGCC AGATTGCAGG CTTTACTCT CAAGAAGAAT TGCAATTAGT	9300
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TTCTCTAGTT GATATCTTAT CACGTCATAA CTGGGTAAAA AACGTTCTCT TCTTAGCCGA	9540
TAGAACTTCC TTGGTTAAGC AAGCATATGA TTCGTTTGA AAATTACTCC CAGATCTTTC	9600
CGTTTGTAAC TTCTTAGAAG ATAAAGAAGG AGCTCAATCA AGTCGCATGG TCTTTTCAAC	9660
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CAAGTCCATT TTTGATTATT TTGATGCAAG AATTGTAGGC TTAACAGCTA CTCCGCGTCA	9840
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ATATGATTTG GAAGAGGCTG TTAAAGACGG ATATTTAGTA GCCTATCATT CTATCGAAAC	9960
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TAATTCCTTT ATTTTCAATA AAAGTACAGT AGAAATTGTT TTAAATGAAC TCATGACAAG	10140
AGGAATTCAG ACAGCCTCGG GTGATGAAAT TGGTAAAACT ATTATTTTGG CTA AAAATCA	10200
TGATCATGCG GAATATATCA GAGGTATTTT TAACAACCGC TATCCTGAAA AAGGGAGCGA	10260
CTATGCTCAG GTGATTGATT ATAGTATTAA GCATTATCAG ACCTTGATTG ATGATTTTAA	10320
AATTAAGGAG AAGTATCCTC AAATTGCGAT TTCTGTGCGT ATGTTAGATA CAGGTATTGA	10380
TGTACCAGAG GTTGTTAATT TAGTCTTCTT CAAGAAAGTA CGCTCTAAAA CTAAGTTTGG	10440
GCAGATGATT GGTGAGGAA CCCGTCTATG TAAAGATTTA TTTGGACCTG AGCAGGATAA	10500
GGAAACTTC TTGGTATTTG ATTATGGGGA CAATTTTGAT TATTTTCGTG CAGATCCAAG	10560
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TCAGCAGCTT GTCTCGGAAC TTCAAGGTCG TATAGAGAGC TTAAATGAGT TGGACTTCAG	10740
GGTTCGTATG GTTTTAGATA CAGTTTATAG CTATAGGAAA TTGGAAAGTT GGCAGAATCT	10800
AACTGCTGTT ACAAGTGAAA CCATTCAAAA AAATCTCTCT CCGCTTTTAT TTGATGAAGA	10860
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TTCTGCTATT GGCAATATCC CGCAGGTTTT TGAGCAGGCT GAAATTATCA GGAAAGTACA	11040
GGAGCCTGAA TTTTGAAAAG AAGTTAACTT GTCTGATTTG GAAAAAATTC GTCTTGCTAT	11100
TCGAGATTTA TTACAGTTTT TGGATAAAAC AGACCGTAAA CCCTACTATG TTAACTTTGA	11160
AGATCGTATA CTCTCCACTG TTCACGAGAC CACAGCATTT TTGCAGGTCA ACGATCTTCG	11220
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TAAGCTATAC CATAATAAAA AGTTGACATC TGATGATATG CTTGCACTTG AAAAAATGCT	11340
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CTACATTGTA GAAAATGGTT TTTTAGAGAC GAAAGTGTTA ACGCAAGAGC CGTTTAAATC	11580
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AATCATTGAA CTTATCAATA ATCGAGCTGG AGAAGCGGCT TAAATCTAA AGTGATTGCC	11700
ATGCTGAGAC TCATTTAAAA TAAAAAGAG TAGAAATTTA TGCTATATAT GAGAAGTTTT	11760

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ATTAGGAAGA ATGTCATCGT TTTCTAGAA TACAGTATCA GTTGTTAAGT GGTGATAAA	11820
TTTCAAAGTA GATACTTGTA CCACGATGTT TGTGATCGA GTTATTAACA AAAGAGCTAC	11880
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GCGTTTTCTG ATGTTAAAGA CTTTCTACCA GGTTTTTTAA AAGCATAATT GTTAGTTGTA	12180
GTCATTTATT ATTCTTCAA GAAAAATGGT GGGGCGAATT TTTTCAGTTC TTCAAAGCAC	12240
TTTTGAGCAG TATCTGCATC TTCACAGATG ATAAGACAGA CATCATTACC ACAAAGGTA	12300
GCGATAGCGT CAGGGAAGCT CAAAGTATCA ATGATAGAAC CAAAGGATTG AGCCAGTCCA	12360
GGAAGGGTTT TTAGTAGGAC TTGGTGTGTA ACTGGGCGCA TCCAGACAAG GCGTCTTCC	12420
ATGTAGAGTT CGAGACGTTT TTCCCATTTT GAGATGGAAC CATTGTTAAG AACATAATAA	12480
GCGCTATCTT CTTGCGGAC TTTTGATAGG TTCATATTTT TGATGTCGCG TGAGAGGGTT	12540
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CAACATGTGA TAGCGACCGT TGTCAATGGT TCTAGCACTT AAAATAGCTG GATAAGGTTG	13020
TAGGTATTTT TTTTGCCAA ATTCTAGCAG TTGGGCAGAT AAGAGCCCTT TGTTTGTA	13080
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AAGGTTAATA GTAATCTGAT TGGCTTTCCC TTGATAGAGC TCTGTATTGA AGGTTTGGTA	13200
TGTCTTACCA TAGCGCTCAA AATCCTTATC TGGGTACTGG TTTTGAATAG CTGCTCTTC	13260
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AGTCTGTGGA GCTGTATTGT CCTGCCAGAT AACAGTAGGA AGTTGAAAGT CTGTTTCCTG	13380
TCCTAGTAAT TTCTTGGTCA ATAAGGCATT TATGGACTCA CGGAAGTCAA TTGATTGCCA	13440
ATTGTTTCATG TAAACATGGG CACCATTATG GAAAAAGAGA TGCTTGTGTA TATGAGTAGG	13500
AAGAGCATGG AACATCTGGT AACATGAAG TGTTTTGACA TTCCAATCCT GAGAACCATG	13560

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AGTAAAGACA ACCTCTGCCT TTA	CTTTATG GGCATTGAGC AGATAATTGC GGT	CATGCCA	13620
AAACTGATTG TAGTCCCCAG TTTTTCGGTC	TAGCTGAGCT TTCAC	TTTTT CTAAGTCAGC	13680
TTGGTGAGCT TCATTGCCAC GGATATAGTC	GCCAGCTAAG AGATTACGAG AATAGGTTAA		13740
CTCAGCAAGG GAGTCAAAGT CCTCACCTGG	ATAACCACCT GGGCTAGTCA CCAGACCGTT		13800
TTACACGGTAG TAGTTGTACC ATGATGAAAT	TCCTGCCTCG GCAATGATAA CTTCTAAACC		13860
ATCGACTCCT GTAGTCGCAA GACCATTGGA	CATGGTACCT AGATAGGAAA GTCCTGTTGT		13920
AGCAACTTTT CCGTTTGACC AATCAGCCTT	GACTTGACGC TGGCGCGTGT GATCAGTAA		13980
GGCACGGCAA CGACCGTTAA GCCAATCGAT	GACATTTTTA TAAGCCTCGA TTTGCTGGTA		14040
GTCTCCATTA GTCATGAAAC CTGTCGAGTC	TTTGGTACCA ACACCTGAGA CATAGAGATT		14100
GGCAAAGCCT CTCGGAAGGA AGTAGTCGTT	TAGTGTATAG CTAGAGTTGA TGTGAGTTAG		14160
CTTTTCTCTA GCCTCTGCTA TAAGCTCAGC	TTTACCTTGG GGTGGACGA GATTTAGTTG		14220
AGGTTTCTCT AGCTCAATCT TGTGAGGAAG	CTTAACCTCA AGCTCGCCCT CCATCTTGTA		14280
GAGAGCCTTG TCACTAGCCT TGTCAATGGT	TCCCTGATGA TAAGGGCTGG CTGTCATGAT		14340
GGCAGGGATT TTTCCATCAA AACGAGGGCG	AATAATGCTA ACCTTTACTA GGTCTGATAG		14400
CCCTTTTGG TCAGTATCGA CACGAGACTC	AACGTAAACG ACTTCACGAA TGACATCCTG		14460
GTTAGAAAAA GTAGCCAAAC TCTTGCCGTT	AAAGTAGTGG TAGTCATTAT CCTCCGGAAT		14520
AAGACCATCA CTAACAAGTT GGTGATAAG	AGTATTTCCT TTTTGGTGC GAGTATTGAG		14580
TAAGTGATAG AGATTTTCAA TCAAGTCACC	ATATATAATG GGAAATCCAG TTTCTTTACG		14640
AAAAACGTCA CTATCTTCGA AGTCAACCAA	ATAAGAAAAG CCTAAAAGTT GAAAAGCAAC		14700
AGTATAAAAA ATATCTGCTG TCAGTTCATC	TTCTGATTGA AAAAATGTCA GCAGGTCTGT		14760
TTTTTTATCA GCTGCTAGGA TAGAAAGTGG	GTAGTTGGTG TCTTGATAAG TGAAAAAGAA		14820
ACGACGTAAA AAGGTTTCAA GTGAGTCTTT	GTGATTGGCT GTATTTTGTA AATCAAAGCC		14880
ACATTTTTTT AGTTCAGATA AGACATTTTC	TTTTGGAAAA TTGATATAAC TATATTGATT		14940
AAAACGCATA GAACCTCCAT ATAGAATGAC	AGTTAAGGTT ATTATATCAA AAAAAAGCA		15000
GAAAGGGAAT TGTTAACTTC AAAAGGAAAT	AATCCAATAA AAATGAATAA AGTACTAAAT		15060
TCAATATAGA GAACAGAGTA ACAATAAGAA	TAAATAGATA GGGTATAAAA GTTCTAGGAG		15120
ATTTATATTA TATGCTTTCT ATTTTATAT	ACAATATAGT ATAAATATAA AAATGATGAC		15180
AAAAATACAA ATGAATAGAA AATAAATTAG	TAAGCTGATG AAATTTTCT CAAGAGAAGC		15240
CATTTATAGG TGAAATGGT ATAATATAGT	GAGAAGGATA GAGGAGAAGT GTAAATTGAT		15300

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CGCACAACTA GATACAAAA CAGTCTATAG TTTTATGGAA AGCGTCATTT CGATCGAAAA	15360
GTATGTGAGA GCAGCTAAAG AATACGGCTA CACTCATTTG GCTATGATGG ATATTGACAA	15420
TCTTTATGGC GCTTTCGACT TTCTAGAGAT TACAAAAAA TACGGCATTC ATCCTTTGCT	15480
AGGGCTTGAA ATGACAGTGT TTGTAGATGA TCAGGGAGTG AATTTGCGCT TTTTAGCTCT	15540
ATCTAGTGTG GGCTATCAGC AGTTGATGAA GCTTTCGACA GCCAAGATGC AGGGGGAGAA	15600
AACTTGGTCA GTCCTGTCCC AGTACCTGGA GGATATCGCG GTCATTGTGC CTTATTTTGA	15660
TAGAGTTGAG TCGTTAGAAC TAGGCTGTGA TTAATATATA GGGGTTTATC CAGAAACACT	15720
AGCAAGCGAA TTTCATCATC CTATCTTACC TCTTTATCGG GTCAACGCTT TTGAAAGCAG	15780
GGATAGAGAA GTTCTTCAAG TTTTAACAGC GATTAAAGAA AATCTACCGC TCAGAGAAGT	15840
TCCCTTGCGT TCGAGACAAG ATGTCTTTAT ATCAGCAAGT TCTTTAGAGA AACTATTCCA	15900
AGAGCGTTTT CCGCAAGCTT TGGACAATTT AGAAAAGCTT ATTTTCAGGCA TTTCTTACGA	15960
CTTGGATACT AGTCTGAAAC TGCCTCGTTT TAATCCAGCT AGACCAGCAG TAGAGGAGTT	16020
GAGAGAGCGT GCTGAACTGG GGCTTGTTCA GAAGGGGTG ACTAGTAAAG AATATCAAGA	16080
TAGACTAGAC CAAGAATTGT CTGTTATTCA TGATATGGGC TTTGATGATT ATTTCTTGGT	16140
TGTTTGGGAT TTGTTGCGTT TTGGACAATC GAATGGCTAT TATATGGGAA TGGGAAGGGG	16200
TTCTGCAGTA GGCAGTTTGG TTTCTTATGC CTTAGACATC ACGGGGATTG ACCCAGTAGA	16260
GAAAAATCTG ATTTTGAAC GCTTCTTAA TCGTGAACGC TATACCATGC CTGATATTGA	16320
TATTGATATC CCAGATATTT ATCGTCCAGA TTTTATCAGA TATGTTGGTA ATAAATATGG	16380
TAGTAAACAT GCGGCACAAA TCGTTACTTT TTCAACCTTT GGAGCCAAGC AAGCTCTTCG	16440
AGATGTCTTG AAACGCTTTG GTGTGCCAGA GTATGAATTA TCTGCAATTA CTAAGAAAAT	16500
CAGTTTTCGT GACAATCTTA AGTCGGCCTA TGAGGGAAAT CTCCAGTTTC GTCAGCAAAT	16560
CAATAGTAAG TTAGAATACC AAAAAGCTTT TGAGATTGCT TGCAAGATAG AGGGCTATCC	16620
AAGGCAAACC TCTGTCCATG CGGCTGGTGT TGTAATTAGT GACCAAGATT TAACCAACTA	16680
CATTCTCTA AAGTATGGTG ATGAAATTCC ACTGACTCAG TATGATGCTC ATGGAGTTGA	16740
GGCTAGCGGA CTTTTGAAGA TGGACTTTCT GGGACTACGA AATTTGACCT TTGTCCAGAA	16800
GATGCAAGAG TTGCTTGCTG AAACAGAAGG TATTCATCTG AAAATTGAAG AAATCGATTT	16860
AGAAGACAAA GAAACGTTAG CTTTATTTGC CTCTGGTAAT ACAAAGGTA TCTTTCAATT	16920
TGAGCAACCA GGTGCCATTC GTCTGCTTAA GCGTGTGCAA CCAGTCTGTT TTGAAGATGT	16980
CGTCGCGACT ACTTCTCTAA ATCGACCGG TGCTAGTGAC TATATCAATA ATTTTGTGGC	17040
AAGAAAGCAT GGCAGGAAG AAGTGACTGT TCTGGATCCA GTACTGGAGG ATATTTTGGC	17100

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TCCAACCTAC GGCATAATGC TCTATCAGGA GCAGGTTATG CAGGTTGCCC AGCGACTTGC	17160
CGGATTTAGT CTTGGGAAAG CCGATATTTT GCGTCGGGCT ATGGGGAAAA AGGATGCCTC	17220
TGCCATGCAT GAGATGAGGG CTCCTTTAT TCAAGGTTCA TTAGAAGCTG GTCATACTGT	17280
GGAAAAAGCA GAGCAGGTCT TTGATGTTAT GGAGAAGTTT GCAGGTTATG GTTTTAACAG	17340
GTCACACGCC TATGCCTACT CAGCCTTGGC CTTCCAGTTG GCTTATTTCA AAACGCATTA	17400
TCCAGCCATT TTTTATCAGG TCATGTTAAA TTCTTCCAAC AGTGATTACT TAATAGATGC	17460
ACTTGAAGCA GGTTTTGAAG TAGCCTCTCT ATCCATCAAC ACCATTCCCT ATCACGATAA	17520
AATTGCCAAC AAGGCCATCT ATCTAGGTTT GAAATCCATT AAAGGAGTCA GTAATGATTT	17580
AGCTCTCTGG ATTATTGAAA ATAGACCTTA TTCTAACATT GAAGATTTTA TAGCTAAATT	17640
ACCTGAGAAT TATCTGAAAC TTCTCTGCT AGAACCTTTG GTAAAAGTTG GTCTTTTCGA	17700
TTCAATTGAA AAAAATCGTC AAAAAGTATT TAATAACTTA GCTAATCTAT TTGAATTTGT	17760
GAAAGAGTTG GGAAGTTGT TTGGAGATGC TATTTATAGT TGGCAGGAAT CGGAAGATTG	17820
GACCGAACAA GAAAAATTTT ATATGGAACA AGAGCTTTTA GGGATAGGTG TCAGCAAACA	17880
TCCACTACAA GCTATTGCAA GTAAGGCTAT TTACCCGATT ACCCCAATCG GAAATTTGTC	17940
AGAAAATAGC TATGCTATTA TCTTGGTGA AGTTCAGAAA ATAAAAGTGA TTCGTACCAA	18000
AAAGGGTGAA AATATGGCCT TCTTACAGGC AGATGATAGT AAGAAAAAAT TGGATGTCAC	18060
TCTCTTTTCA GACTTATATC GTCAGGTTGG ACAGGAAATA AAAGAGGGAG CCTTCTACTA	18120
TGTAAAAGGA AAAATACAAT CACGTGATGG CCGCTGCAA ATGATTGCAC AAGAAATAAG	18180
AGAAGCAGTT GCTGAACGCT TTTGGATACA GGTGAAAAAT CATGAATCGG ATCAAGAAAT	18240
TTCACGCATT TTAGAACAAT TTAAAGGCCC AATCCCAGTC ATCATCCGGT ATGAAGAGGA	18300
ACAGAAAACC ATCGTTTCTC CCCATCATTT TGTAGCTAAA TCCAATGAAT TAGAGGAGAA	18360
ATTGAATGAA ATCGTTATGA AAACGATTTA TCGCTAAAAA TACGGAAAAAT AGAAGAATTT	18420
TCAACGTAAA TGTGGTATAA TCAGTAAGAA TGTTAAAAGA AAAAGGAGCA TAACCAATAT	18480
GAAACGTATT GCTGTTTGA CTAGTGGTGG AGACGCCCTT GGTATGAACG CTGCCATCCG	18540
TGCAGTTGTT CGTCAAGCAA TTTCAGAAGG AATGGAAGTT TTTGGTATCT ATGACGGATA	18600
TGCTGGTATG GTTGCCGGTG AAATTCATCC CCTAGATGCA GCTTCAGTAG GGGACATCAT	18660
TTCTCGTGGT GGTACTTTCC TTCCTCAGC TCGTTACCCA GAGTTCGCTC AACTTGAAGG	18720
GCAACTTAAA GGGATTGAGC AATTGAAAAA ACACGGAATT GAAGGTGTAG TTGTTATCGG	18780
TGGTGACGGA TCTTACCACG GCGCTATGCG TTTGACTGAA CATGGCTTCC CAGCTATTGG	18840

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TCTTCCAGGT ACAATCGATA ACGATATCGT TGGTACTGAC TTTACAATCG GTTTTGACAC	18900
AGCGGTTACT ACTGCCATGG ACGCTATCGA TAAGATTTCGT GATACATCAT CAAGTCACCG	18960
TCGTACTTTT GTAATCGAAG TTATGGGACG TAACGCTGGT GATATCGCTC TTTGGGCTGG	19020
TATTGCAACT GGTGCTGATG AAATCATCAT CCCTGAAGCA GGCTTCAAGA TGGAAGATAT	19080
CGTAGCAAGC ATCAAAGCTG GTTATGAATG TGGTAAAAA CACAATATTA TCGTCTTAGC	19140
TGAAGGTGTG ATGTCAGCGG CTGAATTTGG TCAAAAACCTT AAAGAAGCTG GAGATACAAG	19200
CGACCTTCGT GTAACAGAAC TTGGACATAT TCAACGTGGT GGTTCCTCAA CTGCGCGTGA	19260
CCGTGTTTTG GCGTCACGTA TGGGTGCACA TGCTGTTAAA CTTCTTAAAG AAGGTATCGG	19320
TGGTGTTCG GTTGGTATTC GTAACGAAAA AATGGTTGAA AATCCAATTC TTGGTACTGC	19380
AGAAGAAGGG GCATTGTTTA GCCTTACTGC AGAAGGTAAG ATTGTGGTTA ACAACCCAGC	19440
TACAAA	19446

(2) INFORMATION FOR SEQ ID NO: 52:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 16593 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 52:

TCGTAAATAT GCTCTGTTTT TGGAATTTGT TTCTTAATCT GTTTGGCAAG TGCCTTCATC	60
ATAGAAATAG GACCACACAT ATAGACGGTT GCATGTTCCG GCACCTCTTT TTGTTCAAAA	120
TTAAGATAGC CGTCTTTCGT ACTGTCGATT AGATGGAGTT CAAAATTAGG ATTTTCTGA	180
GCATAGTTAC GGAGTAAATC TAGGTAGACT GCATTTTCAT CTCCACGGAA GCTATAGTAG	240
AAGTGAACCT GTTTATCTAA AATAGGATGT TCACGGATGT AAGAGATGAA GGGGGTGATC	300
CCAATACCTC CAGCAATCCA AACCTGATTT TCTCGTCCTT CTTCTATGAT CATGTGTCCG	360
TAAGCTCTGT CTAGGGTTAC TTTGCTGCCG GCTTGAAGAT TATCATAGAT ATTCTTGGTA	420
TGGTCGCCTG AAGTTTTAAC AGTAAAGTAA AGAGTTTGAC CATGACCTCC TGAGATAGAA	480
AAGGGATGCG GAGCACTTTC AAAGCCTTCT TGGAAAATCT TTAGAAAGGC AAATTGTCCT	540
GATTGATAGT TGAAAGGTCT GCTAAGATGG ATTTGAATTT CTCTAGTATC GTGATTTAAG	600
CGTTTGAGAT GGGTAATTTT CCCTAGATAG GGGAAGGAAA TCTTTTGATA TAGAAAAATG	660
ATATAAAAAC CAGCTAGTAA GCCTAAAAGG GCATAGCTAC CAACAAGAAA ACTTAGAAGA	720
TTAAATGTAA GGAGACGATT GCCCATTATC ATGTAGATGT GAAAGAGTCC TAAAATATAG	780

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GCTAGGTAAA CCAGGCGGTG AATCCATCGC CAAGCTTCGT ATTGGATGTA TTTGCCTAAA	840
TAGGCGACAA GGATGATGCT GGCAAAGATA TAGATGGCAA GATTGCCAAA CTGAGCAGCT	900
AAGCGAGAGC CCCACAAACC GCCCATACTA AAGTTATGAA AGATTAGTAG GATGATTGAG	960
AGAAAGGCTG TGAATTTGTG GACGGTGTAG ACCTTCTCCA AACTGTGAAA CCAGCTTTCT	1020
AGTAGTGGGA GACGAGTGGC TAGGATAAAA GTCAGAGATA GGCTTGTTAA AGCTAGTCCT	1080
GGAATCATGA ATTGGGGAGA AGTGTTTCATC CAAGTCAAAA GAGTCAAGAT AAAACTAGCT	1140
ATGATAAAGA GTAGTCCTTT GACTGATTTC ATAGAAAATT CCATTTCATT TAGATTTCTGA	1200
TTTGTGTGTA ATAAATTTGT TACATTTTAT CATAGAAAAT GTATGGTGTC AAATTGAGGT	1260
CTATAAATAT CTACTCTCAT CAAAAAATC TCCAATTGAA CTGGAGAGTG GCTGTTTATA	1320
CTCAATGAAA ATCAAAGAGC AAACTAGGAA GCTAGCCGCA AGTTGCTCAA AACACTGTTT	1380
TGAGGTTGCA GATAGAGCTG ACGTGGTTTG AAGAGATTTT CGAAGAGTGT TATTCTGCAG	1440
CTTGTTGCCA ACGTTTGGCT AGCATATGAG ACAGGCTAGA AATTGCTAGG TTAAAGCTGA	1500
AGTAGATGAG GGCAATCAGG ATGTAAAGAC TGAAGACCTG CTCTGGTTCG AAATAACGGC	1560
CCATGAGAAT TTGGCTGGCT CCAAAGAGTT CTTGTAGGGC GATAACAGAG TAGAGGAGAC	1620
TGGTATCCTT AATCACGGTA ACAAATGAG AAATGATGGC TGGTAGCATT TTGCGGATGG	1680
CTTGTTGGGAG AATGATGTAG TAGAGGATTT GGGCTGAGGT GAAGCCTTGT GACATTCTCG	1740
CTTCGTA CTG TCCCTTGTCT ACGGCATTGA GACCGCCTCG AATAATCTCA GCCAAGGCTG	1800
CTGATGTAAA GAGAGTAAAG GCTGTAATAC CTGCTGGTGT GGATTTTCATT TTGAACACCA	1860
AAAAGATAGT AAAAATCCAG AGAAGGTTGG GAACGTTGCG CACAACTCG ATATAAATAC	1920
TGGAAATAAT GCGTAAGACA GGATTTTTCG CATTTCTCGT GACAGCTAGC ACCGTACCGA	1980
TGATAGTAGA GAGGATGATG GCAATCAGAG AAATATAGAG GGTCAAGCCA AATCCTTTAA	2040
AGATAAGAC TAGGTTATCT GGGGTTAAAA CTTCTAAAAT AGATTCCATA GTAACCTCCT	2100
AAAGTGAATA GGCTTTTTTG TTGGCTTGCT CCATCTTGCG ACCAACTGG GCAACAGGGA	2160
AGCATAGAGC AAAGTAGAGA AGAGCAGCAC CTAAAAAGGC TGGTATATAG TTTCCGTTGA	2220
GAGCCGACCA AGACTTAGTC ACAAACATCA AGTCTACTCC AGAGATGATA GCTACAGTAG	2280
AGGTGTTCTT GATGAGGTTA ACAATTTGGT TGGTCAATGG AGGGAGAATG ATGCGGAAGG	2340
CCTGAGGCAA GATAATCAAG CGCATGGCAC TGATATAGGT AAAACCTTGC GACAAGCGCG	2400
CCTCCATCTG ACCACTAGGA ATAGACTGAA TCCCTGAACG AATAACCTCA GCGATATAAG	2460
CGCCGTGATA GAGTCCACG CAGAGAACGG CTGTCCAATA AATTGGAATC ATGATGATAT	2520

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GGTCACTGAT	AAGAGGTAGG	CCATAAAAAA	CAATAACAAA	CTGCACCAAG	AGGGGAGTAT	2580
TTTGGTAAAA	TTCAACAAAG	ATGCGAGCTA	AAATGCGTAA	AATTGGACGT	TTACTGGTTG	2640
ACATGGCACC	AAAGAAGATG	CCCCAAAACCA	TAGCGAGGAT	AAAGGAACCA	ACCGCTAGGG	2700
CAAGGGTGAA	GAGGAAACCA	TTGAAAAAATT	GTCCAAAATC	CTGAAAATAG	GCTGTCCAAG	2760
ATGATAAATC	TGTCATGGGG	TGTCCTCCTT	AATCTGCAGT	ATGGCTAGAT	GGTTTGAGCT	2820
TGTAACGGTC	ATAAAGTTTC	TGCAAACTAC	CATCCTTGCT	CCATTTAGTA	ACCAAGTTAT	2880
CAAGATAGTC	GTTGAGCTCT	GTATTTGATT	TCTTGGTAAAC	AATACCGTAG	TCAGATGGCT	2940
TGAAACTATC	ATCTAGTAGT	GCTGTCCGTT	TACTAGTGTA	GCCAGATAGA	ATAGAGCGGT	3000
CAACGGAAAA	GGTATCGATA	CGATGAGCGT	GCAGGGAAGT	AATCAATTCT	GGGTAGGAAC	3060
CAAGTTCGAC	GAATTTAAAC	TTCAGACCTT	TCTTTTTACC	CAGTTCAGTA	ATCAGGCGTT	3120
GGGTGATAGA	ACCTTGGGCG	ACTCCGATGG	TTTTGCCGTT	TAGGTCCCTCA	ATCTTTTTGA	3180
TTTTTGGCAGA	TTTATTGACC	AAAAATCCAG	AAGCGTCTGT	GTAGTAGGGA	CTGGTAAAGT	3240
TGTAGAGTTT	TTTGC GTTCG	TCCGTGATGG	TAAAGGTCGC	GATATCCATA	TCGACCTGTT	3300
CATTGTCTAG	AAGGGGGCCG	CGGGTTTGTG	CTGTAACCGG	CACATAGCGA	ATCTTGACCT	3360
TGAGTTCATC	AGCTACCATC	TTGGCCAAGT	CGGTTTCGAT	ACCAGAATAA	GTACCGGTCT	3420
TGGGATCTTT	GTAACCAAAA	TTGGGAACGT	CTTGTTTGAC	ACCGACAACC	AGTTCGCCTC	3480
TTTTTTGAAT	GTCTGCGATA	CTTGTATCAG	CCTGGACTGG	TTTGGCAGCA	GCAAGGCCGA	3540
AAAGGCTAAT	CAATAATGCT	GATAAAAAGA	ATTTTTTTTC	ATAGGCGCCT	CCTTATTTTGA	3600
CTTTGTCACT	TTCGTGGTTG	ATAATTTTGC	TGAGGAATTG	TTGGGCACGA	GGTTCGCTTG	3660
GATTGTCAAA	AAAGTTATCG	ACATCTGTCTG	TATCTACTAA	AACTTCTCCG	TCGGCCATAA	3720
AGATAATGCG	GTCCGCAACC	TCTCGAGCAA	AGCCCATTTT	GTGGGTAACG	ATGATCATGT	3780
TCATCCCATC	ATGCGCCAGT	TTCTGCATAA	CTGCTAGAAC	ATCTCCGATA	GTCTCAGGAT	3840
CAAGAGCAGA	TGTTGGTTCA	TCAAAGAGGA	GGAGTTCGGG	ATGCATAGCA	AGACCACGAG	3900
CGATGGCGAT	CCGCTGTTTT	TGTCCACCAG	ATAGCATGGC	GGGATAGGAA	TCTTTCTTGT	3960
CCCACATATT	TACAAATTCC	AGATATTTTT	GGGCGGTTTT	TTCAGCTTCT	TTTTTATCAA	4020
TTCTTAGAAC	TTCAATGGGT	GCAAGCGTTA	CGTTTTCTAA	CACAGCTTTG	TGTGGATAAA	4080
GGTTAAAAATG	TTGAAAAACC	ATGCCGACTT	CCTTGCGAAG	AGGTACCAAA	TCTTTCTGGC	4140
TGGCACCAGC	AACTTGGTGC	CCATTGACTA	GGAGACTTCC	TTTGTCACAA	GTCTCTAAAC	4200
CATTGATCGT	ACGGATAAGA	GTGGACTTCC	CAGAGCCAGA	AGGTCCAAGC	AGGACAACAA	4260
CTTGTCCTTT	TTCAAAACGG	AGATTGATGT	TGCGGAATGC	GTGGTAGTCT	CCGTAATATT	4320

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TTTCGACGTT TTTAAATTCT ACTAAAGCCA TGAGAGATCT CTATTGTGTT ATATTTTATA	4380
ACACGGTTCT ACAATAAAAG AATGTTCTTG TCAAATCATA TCTGAAAAA TTCACTATAG	4440
TGAAATAAGA ACAGGAAAAA TCGATCGGA CAGTCAAATC GATTTCTAAC AATATTTAG	4500
AAGTAGAGGT GACTATTCT AGTTTCAATA TACTATAAAA TGTTATAAAA AAGCAATCTG	4560
GATAGAGAAA ACGTCTAAAT CATGTTATAA TGAAGCAATA GAATTCCTAG AAAGAGTGGA	4620
TGTCTTTTGG ATAACACCTA CTTATGAATG GCAGTTTGCC CTGCAGGTAG AAGATGCGGA	4680
TTTTACAAAG ATAGCCAAGA AGGCTGGACT GGGCTCTGAG GTGGCTCGGT TATTGTTTGA	4740
GAGAGGGATT CAGAACCAAG AAAGTCTGAA GAAGTTTTA GAACCTTCCT TGGAGGACTT	4800
ACATGATGCT TATCTGCTCC ATGATATGGA CAAGGCAGTG GAGCGGATTC GTCAGGCTAT	4860
TGAAGAAGGG GAAAATATTC TTGTTTATGG AGACTATGAT GCGGATGGCA TGACTTCGGC	4920
TTCTATTGTG AAGGAAAGTT TGGAACTT TGGTGTGAG TGCCGAGTTT ACCTGCCAAA	4980
TCGTTTACC GATGGCTATG GCCCTAATGC TAGTGTATTA AAATACTTTA TCGAGCAAGA	5040
AGGGATTTC TTGATTGTGA CGGTGGACAA TGGGGTTGCT GGTCATGAGG CTATTGCATT	5100
GGCTCAGTCT ATGGGAGTAG ATGTCATTGT GACAGACCAT CATTCCATGC CTGAAACCTT	5160
GCCAGATGCT TATGCTATTG TCCATCCTGA ACATCCAGAT GCGGATTATC CTTTAAATA	5220
TTTGGCTGGT TGTGGAGTTG CTTTCAAGTT GGCTTGTCCT CTGTTAGAAG AAGTGCAAGT	5280
GGAATTGCTT GATTGGTCG CTATTGGAAC TATTGCAGAT ATGGTGAGTC TGACGGATGA	5340
AAATCGTATC TTAGTTCAAT ATGGTCTGGA AATGTTGGGT CATACCCAGC GCATTGGTCT	5400
GCAAGAAATG CTGGACATGG CTGGGATTGC TGCCAACGAA GTAACAGAAG AACCGTTGG	5460
TTTCCAGATT GCTCCTCGTT TGAATGCCTT GGGTCGCTTG GATGATCCCA ATCCTGCCAT	5520
TGATTTGTTG ACTGGATTG ATGATGAGGA AGCGCATGAG ATTGCCCTTA TGATTCACCA	5580
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AGACGGTCGT GCCAAGGGCA GTGCTCGTAG TGTGGAAGCG GTCGATATTT TTGAAGCTCT	5820
GGATCCCCAT CGAGACCTCT TCATCGCCTT TGGAGGTCAT GCAGGTGCAG CGGGTATGAC	5880
GCTGGAAGTT GAGCAACTCT CAGATTTATC TCAGGTTTTG GAAGATTATG TTCGTGAAAA	5940
AGGTGCAGAT GCTGGTGGCA AGAATAAGTT AAACCTAGAT GAAGAGTTGG ATTTGGAGGC	6000
ACTTAGCTTG GAAACGGTCA AAAGTTTTGA ACGTTTAGCT CCTTTTGGAA TGGATAATCA	6060

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GAAACCTATT TTTTATATCA AGAATTTTCA GGTGCGAAAGT GCTCGTACTA TGGGGGCAGG	6120
TAATGCCCAT CTAAAGCTGA AAATTTCCAA GGGTGAGGCG AGTTTTGAAG TGGTAGCCTT	6180
TGGTCAAGGC AGATGGGCGA CAGAGTTTTT TCAAACCAAG AATCTAGAGT TAGCGGTAA	6240
ATTGTCTGTC AACCAATGGA ATGGCCAAAC TGCCCTCCAG TTGATGATGG TGGATGCGCG	6300
AGTGGAAGGT GTTCAACTTT TTAACATTCTG TGGAAAAAAT GCAGTCTTGC CAGAAGGTGT	6360
TCCAGTCTTG GATTTTCCTG GAGAACTGCC AAATCTTGCG GCTAGTGAAG CTGTTGTCGT	6420
AAAAAACATT CCAGAGGATA TTAAGTCTGCT GAAGACCAT TTTTCAGGAAC AGCATTCTCTC	6480
TGCTGTCTAT TTCAAAAATG ATATTGACAA GGCTTATTAT CTGACAGGTT ATGGGACTAG	6540
AGATCAGTTT GCCAATTGT ACAAGACTAT TTACCAAGTTC CCAGAGTTTG ATATTGCGTA	6600
CAAGCTGAAA GATTTGGCTG CATATCTTAA TATTCAACAA ATCTTGCTGG TCAAGATGAT	6660
TCAAGTATTT GAAGAACTAG GCTTTGTGAC GATAAAAGAT GGTGTGATGA CAGTCAATAA	6720
AGAGGCGCCA AAGCGGGAGA TAGGAGAAAG TCAAAATTAC CAAAATCTCA AACAAACCGT	6780
TAAAGACCAA GAAATGATGG CGCTGGGTAC GGTGCAAGAA ATTTATGATT TTTTGATGGA	6840
AAAAGAGTAG AAGTTAGGAA AGAGTTGGGA AATCAACTCT TTTTGGAAA CAGACCTTCA	6900
TTTTGAAAAT CATCAAAAA ATGTGATAAT GGTAGGAAA GATTCGGCTG AAAGTATCAG	6960
AACTTTTAGA ATAAGAGGGT AGAATTGCCC TATAATCAAG ATAACTAAG ATTTTGAGAG	7020
AAAAATGAGT AATATCAGTT TAACAACACT TGGTGGTGTG CGTGAGAATG GAAAAATAT	7080
GTACATGCT GAAATGGAG AGTCCATTTT TGTTTTGAAT GTAGGGTTAA AATATCCTGA	7140
AAATGAACAA TTAGGGGTCG ATGTGGTGAT TCCAAACATG GATTACCTTT TTGAAAATAG	7200
CGACCGTATT GCTGGGGTTT TCTTGACCCA CGGGCATGCG GATGCCATTG GTGCTCTACC	7260
GTATCTCTTG GCAGAGGCTA AAGTTCCTGT ATTTGGGTCT GAGTTGACCA TTGAGTTGGC	7320
AAAGCTCTTT GTCAAAGGAA ATGATGCCGT TAAGAAATTT AATGATTTC ATGTCATTGA	7380
TGAGAATACG GAGATTGATT TTGGTGGGAC AGTGGTTTCC TTCTTCCCTA CGACTTACTC	7440
CGTTCCAGAG AGTCTGGGAA TTGTCTTGAA GACATCGGAA GGAAGCATCG TTTATACAGG	7500
TGACTTCAAA TTTGACCAA CGGCTAGTGA ATCTTATGCA ACTGATTTTG CTCGTTTGGC	7560
AGAGATTGGT CGTGACGGCG TCCTGGCTCT CCTCAGTGAT TCGGCCAATG CAGACAGCAA	7620
TATTCAGGTG GCTAGTGAAA GTGAAGTTAG GGATGAAATT ACCCAAATA TTGCTGACTG	7680
GGAAGGTCGT ATCATCGTTG CAGCTGTTTC CAGTAATCTT TCTCGTATTC AGCAGATTTT	7740
TGACGCTGCG GATAAACAG GTCGACGTAT CGTCTTGACA GGATTTGATA TTGAAAATAT	7800
CGTCCGCACA GCGATTCGTC TTAAGAAGTT GTCTTTAGCC AACGAAATTC TTTTGATTAA	7860

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GCCTAAAGAT ATGTCTCGCT TTGAAGACCA TGAGTTGATT ATTCTTGAGA CAGGTCGTAT	7920
GGGTGAGCCT ATCAATGGAC TTCGTAAGAT GTCGATTGGT CGCCATCGTT ATGTAGAAAT	7980
CAAGGATGGG GACCTAGTCT ATATTGCTAC GGCTCCGTCT ATTGCTAAAG AAGCCTTTGT	8040
TGCGCGTGTG GAAAATATGA TTTATCAGGC AGGTGGGGTT GTCAAATTGA TTACCCAAAG	8100
TTTACATGTA TCAGGGCACG GAAATGTGCG TGATTTGCAG CTGATGATCA ATCTTTTGCA	8160
ACCTAAGTAC CTCTCCCTG TCCAAGGGGA GTATCGTGAG TTGGATGCTC ACGCTAAGGC	8220
TGCCATGGCA GTTGGGATGT TGCCAGAACG CATCTTCATT CCTAAAAAGG GGACGACCAT	8280
GGCTTACGAG AATGGAGACT TTGTCCAGC TGGATCGGTT TCAGCAGGAG ATATCTTGAT	8340
TGATGGGAAT GCCATTGGTG ATGTTGAAA TGTGTTCTT CGTGACCGTA AGGTCTTGTC	8400
AGAGGATGGA ATTTTCATCG TGGCTATTAC AGTCAACCGT CGTGAGAAGA AAATTGTGGC	8460
TAGGGCTCGT GTTCACACGC GTGGATTGT TTATCTCAAG AAGAGTCGCG ATATCTCCG	8520
TGAAAGTTCA GAATTGATTA ACCAAACGGT AGAAGAGTAT CTTCAAGGAG ATGACTTTGA	8580
CTGGGCAGAT CTCAAAGGTA AGGTTGCTGA CAATCTGACC AAGTACCTCT TTGATCAAAC	8640
CAAGCGTCGC CCAGCCATT TACCAGTAGT CATGGAAGCA AAATAATCGT TGAAATAAAC	8700
AGAGAGAAAG TCGAGTTTCG GCTTTTCTT ATAGAAAAAT AGAAGGAGAA AATCATGGCA	8760
GTGATGAAAA TCGAGTATTA CTCACAAGTA TTGGATATGG AGTGGGGGGT GAATGTCCTC	8820
TACCCTGATG CCAATCGAGT GGAAGAACCA GAGTGTGAAG ATATTCCCGT CTTGTACCTT	8880
TTGCACGGGA TGTCTGAAA TCATAATAGT TGGCTTAAGC GGACCAATGT AGAACGCTTG	8940
CTTCGAGGAA CTAATCTCAT CGTTGTTATG CCCAATACCA GCAATGGTTG GTACACCGAT	9000
ACCCAGTATG GTTTTACTA CTACACGGCT CTAGCAGAGG AATTGCCACA GGTCTGAAA	9060
CGCTTCTTCC CTAATATGAC GAGCAAGCGT GAAAAGACCT TTATCGCTGG TCTTTCTATG	9120
GGAGGCTACG GCTGCTTCAA ACTGGCTCTT ACGACAAATC GTTTTCTCA TGCAGCTAGT	9180
TTTTCAGGTG CCCTCAGCTT TCAAACTTT TCTCCTGAAA GTCAAAATCT GGGAGTCCA	9240
GCCTACTGGA GAGGTGTTTT TGGAGAGATT AGAGACTGGA CAACTAGTCC CTATTCTCTT	9300
GAAAGTCTGG CTAATAAATC GGATAAAAAG ACCAACTTT GGGCGTGGTG TGGCGAACAG	9360
GATTTCTTGT ACGAAGCCAA TAATCTCGCA GTGAAAAATC TCAAAAAACT AGGTTTTGAT	9420
GTGACCTATA GCCATAGCGC TGGAACTCAC GAGTGGTACT ACTGGGAAAA ACAATTGGAA	9480
GTTTTTTTAA CAACCCTACC AATTGATTTC AAATTAGAAG AGAGACTGAC TTAGTTTGAA	9540
CTTCAGCATA GGGGAGTAG AACTAAAATA AAATATGTTT TCACTAGACT TTTCAAACGm	9600

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AAGTAGTAGA ATAGTAATAA AATACTGGAG GAAAGAGAGT AGGAAATGTA CCGTTATCAA	9660
ATTGGCATTCCACATTAGA ATATGATCAG TTTGTCAAAG AACATGAATT AGCCAATGTA	9720
TTACAAAGTA GTGCTTGGGA GGAAGTTAAG TCTAATTGGC AACATGAGAA GTTTGGTGTT	9780
TACAGGGAAG AAAAATTACT GCGACAGCT AGTATTTTGA TTAGAACTCT TCCGCTAGGC	9840
TATAAAATGT TTTACATCCC AAGAGGACCT ATATTGGATT ATGGGGATAA AGAACTCTTG	9900
AATTTTGCCA TTCAGTCTAT TAAGTCCTAT GCTCGCAGTA AGAGAGCGGT TTTTGTGACT	9960
TTTGACCCAA GTATTGCCT ATCTCAAAGT TTAATCAATC AGGAAAAGAC AGAATTTCCCT	10020
GAAAATCTGG CTATTATTGA TAGTTTGCAA CAAATGGGAG TAAGGTGGTC AGGAAAAACG	10080
GAGGAAATGG GAGACACCAT TCAACCTCGT ATTCAGGCGA AAATATACAA GGAAAAATTT	10140
GAAGAAGATA AACTTTCCAA GTCAACAAAA CAGGCTATTG GAACAGCAGC AAACAAAGGG	10200
CTTGAGATTCAATATGGTGG ACTGGAACATA TTAGATTCAT TTTCGGAGTT GATGAAAAAA	10260
ACTGAGAAGC GAAAAGAGAT TCATTTGAGG AATGAAGCCT ATTATAAAAA ATTGTTAGAT	10320
AATTTTAAGG ACAAGGCCTA TATCACCTTG GCCACCTTGG ATGTTTCTAA ACGTTCGCAA	10380
GAGTTAGAAG AACAGTTAGC GAAAAATAGA GCCTTGAAG AGACCTTTAC TGAGTCGACT	10440
CGAACTTCAA AAGTAGAAGC GCAGAAGAAG GAAAAGAAG GTTTGTTAGA GGAATTGACC	10500
TTCTTGCAGG AATATATAGA TGTAGGTCAA GCGAGAGTTC CTTTAGCGGC TACTTTGAGT	10560
TTGGAATTTG GTACTACCTC TGTCATATA TATGCTGTA TGGATGATGA TTTTAAACGT	10620
TACAATGCAC CAATTTTAAC TTGGTATGAA ACGGCTCGCT ATGCCTTTGA ACGAGGTATG	10680
ATCTGGCAAA ATTTAGGTGG TGTGAAAAC TCTCTCAATG GTGGACTTTA TCATTTTAAG	10740
GAAAAATTTA ATCCAACGAT TGAAGAATAC TTGGGTGAAT TTACAATGCC CACTCATCCT	10800
CTCTATCCTC TGTAAAGACT TGCTCTTGAT TTCCGTAAAA CATTAAGAAA AAAACATAGA	10860
AAGTAAGTAT ATGGCACTAA CAACACTCAC GAAAGAAGAG TTTCAGACTT ATTCTGATCA	10920
GGTTTCTTCT CGTTCCTTTA TGCAATCTGT CCAGATGGGG GATTTGCTAG AAAAAAGAGG	10980
GGCTCGAATT GTTTATCTTG CTTTGAAACA AGAAGGAGAA ATTCAAGTTG CAGCTCTGGT	11040
TTATAGCCTG CCCATGCTGG GTGGTCTGCA TATGGAACTC AATTCGGGGC CGATTTATAC	11100
CCAACAAGAT GCTCTTCCAG TTTTATATGC AGAGTTAAAA GAATATGCCA AGCAAAATGG	11160
TGTATTAGAG TTGCTTGTA AACCCTATGA AACTTATCAA ACTTTTGATA GCCAAGGTAA	11220
TCCAATAGAT GCTGAGAAAA AAAGTATTAT TCAAGATTTG ACTGATTTAG GTTATCAATT	11280
TGATGGCTTA ACAACAGGTT ACCCAGGTGG AGAACCAGAT TGGTTATACT ATAAAGATTT	11340
AACTGAATTA ACTGAAAAGA GTTTGCTTAA AAGTTTTAGC AAAAAGGGTA AACCCTTGGT	11400

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GAAAAAGGCT GAAACCTTTG GCATTCGGTT GAAAAAGTTA AAACGTGAAG AACTATCGAT	11460
TTTTAAGAAT ATAACAAAAG AAACCTCTGA ACGTAGAGAA TATAGTGATA AAAGTTTAGA	11520
ATATTATGAG CATTTTATG ATACTTTTGG AGAACAAGCG GAGTTTCTCA TAGCAAGCTT	11580
AAATTTTTCG GACTATATGA GCAAATTGCA AGGTGAACAA AGTAACTAG AAGAAAACCT	11640
GGACAAGTTG CGACTTGATT TGAGTAAAA TCCTCATTCT GAGAAAAAAC AAAATCAACT	11700
GAGAGAATAT TCTAGTCAAT TTGAAACGTT TGAAGTTCGA AAAGCAGAAG CGCGAGACTT	11760
GATTGAAAA TATGGAGAAG AAGATATTGT TTTAGCTGGG AGTTTATTG TTTATATGCC	11820
TCAGGAAACG ACTTATCTCT TTAGTGGTTC CTACACTGAG TTTAATAAGT TCTATGCCCC	11880
TGCACTGCTT CAAAAATATG TTATGTTGGA AAGCATAAAA CGTGGGAATAC CTAAATACAA	11940
CTTCCTAGGC ATTCAAGGGA TTTTGTATGG AAGTGATGGT GTTTTGCCTT TAAACAGAA	12000
TTTTAATGGC TATATTGTAC GCAAAGCAGG TACTTTCCGT TACCATCCAT CGCCTTTAAA	12060
ATACAAAGCT ATCCAGTTAC TCAAAAAAAT AGTAGGACGT TAAGATGAAA AAGTCAGTAT	12120
TTAGATTTCT TTTAGCTTCT TTTAGTAAAA TAATTCTTAT TTGCTAGAAA GGTGGAGAGA	12180
CATGCGCTGG CTTTTCGTT TGATAGGGC TTTCTTTTCT TTTGTGTGGC GTTTGTTTGT	12240
GCGCTCGGTT TGGATAGTTG TGCTCTTATG TGTGCTTGCT TTCGGACTTC TCTGGTATCT	12300
GAACGGAGAT TTTCAAGGAG CGCTAAAGCA AGCAGAACGG TCAGTAAAA TTGGTCAACA	12360
AAGTATTGAC CAATGGGAGA AAACAGGGCA ACTGCCTAAG TTAAGCCAGA CAGATAGTCA	12420
CCAGCATTCT GAAGGAAGGT GGGCACAGGC CTCTGCTCGT ATTTACCTGG ATCCGCAGAT	12480
GGATTCACGC TTTCAAGAGG CTTATTTAGA AGCAATCCAG AACTGGAATC AAAGTGGTGC	12540
TTTTAACTTT GAACTCGTGA CTGAGTCTAG TAAGGCGGAT ATTACGGCTA CGGAGATGAA	12600
CGACGGAGGC ACTCCTGTGG CAGGAGAGGC GGAAAGTCAA ACTAATCTCT TAACAGGGCA	12660
ATTCTTGTC GTAACGGTGC GGTGGAATCA TTATTATTG TCCAATCCAT ACTATGGCTA	12720
CTCCTATGAA CGCCTGTGCC ATACGGCAGA ACATGAGTTA GGTCATGCCA TTGGCTTGGA	12780
CCATACAGAT GAGAAGTCTG TCATGCAACC AGCAGGTTCC TTTTATGGTA TCCAGGAAGA	12840
GGATGTTGCA AACCTCCGAA AAATATATGA GACTAGTGAG TAGGGTACTA TCTTTCCTTA	12900
CTTTTTTTCG TATAATGGAA CTATGAACAA CTTGATTAAA TCAAACTAG AGCTCTTGCC	12960
GACCAGCCCT GGTGCTACA TTCATAAGGA TAAAAATGGC ACCATTATCT ATGTAGGAAA	13020
GGCTAAAAAT CTGCGTAATC GAGTACGGTC CTATTTTCGT GGAAGTCATG ATACCAAGAC	13080
AGAGGCTCTG GTGTCTGAAA TTGTGGATT TGAATTTATT GTTACGGAGT CTAATATTGA	13140

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GGCACTTCTC CTAGAAATCA ACCTGATCAA GGAAAACAAG CCCAAGTACA ATATCATGCT	13200
CAAGGATGAC AAGTCCTATC CTTTCATCAA AATCACCAAT GAGCGCTATC CACGCTTGAT	13260
TATCACTCGT CAGGTCAAAA AGGACGGAGG TCTTTATTTT GGACCCTATC CCGATGTGGG	13320
GGCAGCCAAT GAAATCAAGC GGTGCTGGA TCGGATATTC CCTTTTCGTA AGTGTACCAA	13380
CCCCCCTCT AAGGTCTGTT TTTATTACCA TATCGGCCAG TGTATGGCCC ACACCATCTG	13440
TAAGAAGGAT GAGGCTTATT TCAAGTCTAT GGCCCAGGAG GTGTCTGATT TTCTGAAAGG	13500
TCAGGATGAC AAAATCATCG ATGATCTCAA GAGTAAATG GCAGTAGCAG CACAAAGTAT	13560
GGAGTTTGAA CGTGCGGCGG AATACCGTGA CCTGATTGAG GCTATTGGAA CGCTTCGAAC	13620
CAAGCAACGG GTCATGGCGA AAGATTTGCA AAATCGCGAT GTCTTTGGCT ACTATGTGGA	13680
TAAGGGCTGG ATGTGTGTGC AGGTTTTCTT TGTCCGTCAG GtAAGCTCAT CGAGCGCGAT	13740
GTCAATCTCT TCCCCTACTT CAATGATCCA GATGAGGATT TTTTGACCTA TGTAGGACAA	13800
TTCTATCAAG AAAAATCTCA TCTAGTCCC AATGAGGTAC TGATTCCGCA GATATTGACG	13860
AAGAAGCTGT CAAGGCTTTG GTGGATTCCA AGATTCTTAA GCCTCAACGT GGAGAGAAAA	13920
AACAACGGT CAATCTAGCC ATAAAAATG CTCGTGTTAG TCTAGAGCAG AAGTTCAATC	13980
TGCTAGAAAA ATCTGTCGAA AAGACTCAAG GAGCTATTGA AAATCTAGGG CGTTTGCTCC	14040
AAATCCCGAC CCCAGTACGT ATCGAGTCCT TCGATAACTC TAATATCATG GGAAGTAGCC	14100
CTGTTTCGGC TATGGTGGTC TTTGTCAACG GTAAACCGAG TAAGAAGGAT TACCGTAAGT	14160
ACAAGATAAA AACGGTTGTT GGACCAGACG ACTATGCCAG CATGAGAGAG GTCATTGCGA	14220
GACGCTATGG TCGAGTACAG CGTGAGGCTT TGACTCCTCC AGATTGATT GTGATTGATG	14280
GGGGCAAGG TCAAGTCAAT ATCGCTAAGC AGGTTATCCA AGAGGAACTG GGCTTGATA	14340
TTCCAATTGC TGGGCTGCAA AAGAATGATA AGCACCAAAC CCATGAATTG CTCTTTGGAG	14400
ATCCGCTTGA GGTGGTGGAT TTGTCTCGCA ATTCTCAGGA ATTTTTCCTC CTCCAACGCA	14460
TCCAAGATGA GGTGCACCGC TTTGCTATCA CTTTCCACCG CCAACTGCGC TCCAAAAATT	14520
CTTTCTCATC TCAATTGGAT GGGATTGACG GTCTGGGACC TAAACGCAAG CAGAATCTTA	14580
TGAAGCATTT CAAGTCTTTG ACCAAAAATCA AGGAAGCCAG TGTGGATGAG ATTGTGGAAG	14640
TTGGGGTACC TAGAGTCGTT GCAGAGGCTG TGCAAAGAAA GTTGAACCCG CAGGGAGAAG	14700
CCTTGCCTCA AGTAGCAGAA GAAAGAGTAG ATTACCAAAC GGAAGGAAAC CACAATGAAC	14760
CATAAAATCG CAATTTTATC AGATGTTTAT GGCAATGCGA CGGCGCTAGA AGCAGTGATT	14820
GCAGATGCTA AAAATCAAGG GGCCAGTGAA TATTGGCTTC TGGGAGATAT TTTTCTTCTT	14880
GGTCCAGGCG CAAATGACTT AGTCGCCCTG CTAAAGGACC TTCCTATCAC AGCAAGTGTT	14940

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CGAGGCAATT GGGATGATCG TGTCTTGAG GCTTTAGATG GGCAATATGG CTTAGAAGAC	15000
CCACAGGAAG TTCAGCTCTT GCGTATGACA CAGTATTTGA TGGAGCGAAT GGATCCTGCA	15060
ACGATTGTCT GGCTACGAAG CTGTCCTTTG CTGGAAGA AAGAAATTGA CGGATTGCGC	15120
TTTTCTATCT CTCATAATTT ACCTGACAAA AACTATGGTG GTGACTTGCT AGTTGAGAAT	15180
GATACAGAGA AATTTGACCA ACTGCTAGAT GCGGAAACGG ACGTGGCAGT TTATGGTCAT	15240
GTTCAACAAGC AGTTGCTTCG TTATGGAAGT CAAGGGCAAC AAATCATCAA TCCAGGGTCG	15300
ATTGGCATGC CCTATTTTAA TTGGGAGGCG TTAATAATC ACCGTTCCCA GTATGCCGTG	15360
ATAGAAGTTG AAGATGGGGA ATTACTCAAT ATCCAATTC GTAAAGTTGC TTATGATTAC	15420
GAAGCTGAGT TAGAATTGGC CAAGTCCAAG GGGCTTCCCT TTATCGAAAT GTATGAAGAA	15480
CTGCGTCGTG ACGATACTA TCAGGGGCAC AATCTGGAAT TATTAGCCAG CTTAATAGAA	15540
AAGCATGGGT ATGTAGAGGA TGTGAAGAAT TTTTTTGATT TTTTGTAAGA GTTTCCTAAA	15600
ATAGCCAATG CAAACTAAAA AAGCGATTTG CTGGTCCAAT CGCTTTTAGT ATATCTTATA	15660
CTCAATGAAA ATCAAAGAGC AACTAGGAA GCTAGCCGTA GGTGCTCAA AGCACAGCTT	15720
TGAGGTTGCA GATAAAGCTG ACGTGGTTTG AAGAGATTTT CGAAGAGTGT TATTGTAAGT	15780
GAGATTGATC TGGGAGGTAA GAACCACTA GATAGGTATT GCTGAGTTTT TCAAGGGTTC	15840
CGTCTTGATA GAGTTCTTTG AGCGCTTTAT CAAATGCTC TTAAACTCT TTTGGTTCGC	15900
TTGAGAAAAT GATATAATTG CTGGGGCTAT CTGCAGAAG TAAATCAACG ACTGAGAGGT	15960
CTAAACCACG GTCCTTGATA ATCTTTTGAA CGGATACCTT GTCAAAACT AGGAAATCAA	16020
ACTCTCCGTT AGCAAGGTCT AGGATTCGTT TACCAATATC CTCACCAGAA AAATTAATTG	16080
TAGCGGGATT ATCAGTGTGT TTCTGATTCC AGTTATTGAT GAATTGAGCG TTAGAAGTTC	16140
CGGTATCCTC TTGTGTGTT TTACCAGCGA TCTGGTCAAG AGAAGTCAA GGATTTTCT	16200
TGTTGCTGAC AAGGACGAGG GGATTGTTGG AAATTGGAAG CGAGTAAAGG TATTTTTCAG	16260
CACGCTCTTT TGTGTAAGT AAGTTATTGG CCGCAGCCTG ATAGTGACCA GAATCAAGTC	16320
CTGGGAAGAT GCTCTCCAG GCGGTTCTTT GGAATTGAAT CTCGTAGTCG CTGAGTTTTT	16380
CATCTACTGC CTTTAAACT TCGATATCAA AGCCTGTCAG ATTGCCCTTG TCTTCGTAGT	16440
CAAATGGTGG CACGTCGCCA GCTGTAGCAA GGACGATTGT CTTTGGAGCG CTAGTCTCTT	16500
TGGGTGTAGC TTGATTCTCA CAGGCAACCA AAAATGGTAG GATAGCTAGT AATAGGCTAA	16560
ATTTTTTCAT ACTGTCTCCA TTCAAATGTA AAG	16593

(2) INFORMATION FOR SEQ ID NO: 53:

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- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 3510 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 53:

GGGATATCCT TATATCCTTG TTCCTGGAAC CATTGTGGGA ATTGCTCAAC AGTTTTTTCA	60
CCTTGAATTC CTGGTGCAAT GACAGTAAGA ATTTCGAAAT CACGATCTGG TTTGCGCCGT	120
AGTTCCATCA ACTCTGGCAT ACTTTTCTTG CATGGACCAC ACCATGAAGC CAAAACTTC	180
AAGTAAACCT TTTTACCCTT AAAATCAGAT AACTTAACTT CTTTGCCATC CATGGATTGC	240
AATGTGAAGT CTGGAGCATC TTTTCCAACA GCAATTTGTT GTACAGTCGT TTGTTGTTTT	300
GGCTGTTGTG CTGCTTGAGT CTTTTAGTT TCTTCCTCAC CACAGGCCAT CAATACAAC	360
AATGACAAGA GACTTAAGCC AGCAAACATT ACTTTTTTCA TTTGTCCTCC TTTATTCAAA	420
AATTCCAGCT AGAACATTTA CTTGTCTTAA TAGTAACAAA ATTCCCATTA AAACAATGAG	480
GAAACCACCA ATTTTCTTTA GTAGCATCAT ATGACGCTTG ATTTTACTAA AATATGGCAT	540
GACTAGACCT GAAGCTAGTG CCAATACCAA GAAAGGAAGG GCCATGCCaG AGTGTAATG	600
AGAGTATAAA TCGCTCCTTG CCAAGCGCCA TTGCCTCCAG AAGCCGCAAG TGCTAAAACA	660
GAACTTAAAA CTGGACCAAT ACAAGGTGTC CAACCAAAGC TAAAGGTAAT ACCAAGTAAA	720
AAAGCTGACC AATAACGATT AGAATCTGAT TTTTAAAGG TAAAACTTT TTGAACCTCT	780
AATTTCTTCA AATGAAAAAT TTCCATCTGG TGAAGACCCA AAATGATAAT AATAGCTCCC	840
ATGCCATATC GAAACCAATT TGCATAGAGA ATATGACCAA AGTAACCAGC ACCAAAGCCT	900
AGAATAAAGA AAATGAGAGA GATACCAGCG ATAAAGCAAA GTGTTCGAAT CAAGCCTGAC	960
CAGAGAACCT TTCTCCCAA CAAAGAAAAG CTTTTTGCAC TTTCTTGATC ATCCAATAAA	1020
ATCCCAGCAT AGACTGGCAG AAGAGGAAAA ATACAAGGAG AAAAAAGGA TAAACACCT	1080
GCTAGAAAAA CAGAGATTAA AAATACTATC GTTTCCAATA AAGAACCAAC TTTCTTAATA	1140
ATTCTAATCC TATTTTACTA TATTCAATTT TATTGTAAAG CTTTCTGCTA CGCAAAATCG	1200
TATCGGGCAC TATTGGACCA ATCTTTCTT TTGCTAGTCA AGGCGGATCT TATCCCCAA	1260
AATAGCCAAA AAGCAACGAC AAGGATTACT CATCGCTGCT TTTGTGAACG AAAATGTCTT	1320
TTAGGTCTGA CATTTCATAA ATCATGTTTT ACTTGAGTTT GTCAAGGATT GCTTTAAGCT	1380
CCTCTACTAG TTTAGTTTCT GTCTCTGCTG AGCCATTTTC TTCTTTCACG AAATCAAGGG	1440
TTTCTTGAG AAGGTTTGG GCTTTGGCAA GGACTTTTTT ATCCGCTTTT TCTGCATCTA	1500

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GCTGTCCTAG AACCTTGATC AATTCCTGTC TTAATTGCTG GATTTCTGAC TCTTCTTAC	1560
GGCGAATCAG CCAGAAGGCA ATCACGCCTA GGAGGGCAAG TAGACTGACC ACAATCACTC	1620
CTGCCGGAAC TGAGTTTGTT TCAGTCATCT TATCTGAATC CTTACTATCT TCCGTTCCTT	1680
GTTTTGCATC CTTCTTGTC TGTGCAGGCT TGCTGTCGCT AGCATTTGCT TTCACATCTT	1740
TGAGAGAGTC CAAGGCAGCC CAGCCTTCAC AGACTCTACT GCAGTATGCA GACCTTACTC	1800
TGTCAAGGCA CTATCTTCCG GAGCTTTTGG AGCATCTAGG AGGACAGCCT TGGTTGCATC	1860
GATTTTCGGA TCAGATACTG TTGCCAAAGC TTCAAGCGT TGGTCTAACT CTTGACTCAA	1920
GGCACGAAGT TCAGACTTGT CAACTTGCTC TTGAGCTTGT GTGCTCGTTG AGCTAGCCGA	1980
AGCGCTTGCT ACCACTCTAG GATCTTGAGT CGGAGCTGAG CTTGGAGCTG GGACAGGGCT	2040
TGCAGGTTGA CTAGGAACAG TTATGGTATA TTGAACTAG AATAGTACAT ATGGACTTCT	2100
AAAACATTGT TAGAATTCGA TTTTACTGTC CTGATCGATT TGTCTTATTC TTATTTTATT	2160
TTACTATAAT AACCAGTGGT GTGGTTAATG TTGGTAAGAG AAACCTCTGA AACCAAGCTT	2220
CAAAAAAGTC GCTCGTCATC GTCTCTTCGT AAGTCATTGG AGCGATTAAT TCACCATTG	2280
TTAGACCTGC AACCAAAGAA ATCCTCTGAT ATCTTCTTCC AGATACTTTG CCTCTTATTA	2340
ACTGACCTTT TAATGAGCGA CCATATTCTC GATAAAAATA AGTATCGAAT CCTGTTTCGT	2400
CAATCTAAAC AGGTGCTAGG TGCTTTAAAC TATTTAAATT CTTAAGAAAT AAGGCTACTT	2460
TTTCTGGGTC TTGTTTATAG TAGGTGTGGT TCTTTTTC GAGTGTAGCC CATAGCTTTG	2520
AGCGCATAGT GGATGGTAGT TGGATGACAG CCAAATKTCAG AAGCTATTTT AGTCAAATAA	2580
GCTTCTGGAT TGTCAGTAAG ATAGTTTPTA AGTCTATCTC TATCAACTTT TCTTGGTTTT	2640
GTTCCTTTTA CTTGGTGGTT TAGCTCTCCT GTTTTCTCTT TTAGCTTTAA CCAGCCATAA	2700
ATGGTATTAC GTGAGATTG GAAAACGTGT GATGCTCTG TTATACTACC TATTGCTCA	2760
CAATAAGAGA GAACTTTTTT ACGAAAATCT ATTGAATATG CCATAAGAAG ATTATACCAC	2820
ATTGTGTAAT ATTTTGGTT CATTTCACTA TAACACAAAA TAGATTATTA TTACATAACA	2880
AAAAAGAGGT CTAAACCTCT TAACTCAATT ACTCCGCCAG TAGGACTCGA ACCTACGACA	2940
TCATGATTAA CAGTCATGCG CTACTACCAA CTGAGCTATG GCGGATTAAA GCTAAGCGAC	3000
TTCCCTATCT CACAGGGGGC AACCCCAAC TACTTCCGGC GTTCTAGGGC TTAACCTCTG	3060
TGTTCCGCAT GGTACAGGT GTATCTCCTA GGCTATCGTC ACTTAACCTCT GAGTAATACC	3120
TACTCAAAAT TGAATATCTA TTCAATTTAA GAAAACCGTT CGCTTTCATA TTCTCAGTTA	3180
CTTTGGATAA GTCCTCGAGC TATTAGTATT AGTCCGCTAC ATGTGTCGCC ACACTTCCAC	3240

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TTCTAACCTA TCTACCTGAT CATCTCTCAG GGCTCTTACT GATATATAAT CATGGGAAAT	3300
CTCATCTTGA GGTGGkTtCA CACTTAGATG CTTTCAGCGT TTATCCCTTC CCTACATAGC	3360
TACCCAGCGA TGCCTTTGGC AAGACAACTG GTACACCAGC GGTAAGTCCA CTCTGGTCTT	3420
CTCGTACTAG GAGCAGATCC TCTCAAATTT CCTACGCCCG CGACGGATAG GGACCGAACT	3480
GTCTCACGAC GTTCTGAACC CAGCTCGCGT	3510

(2) INFORMATION FOR SEQ ID NO: 54:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 20986 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 54:

CGGAGAAAAA CATGGCTAAG TCAAACCTTG AAAAAGTAGA ATCAGTTGTT GGCTGGGTTC	60
GTGATAAGAA AATCACAGGC TACCGTATCT CTAAAGAAAC GAATGCGCGT GAAATGTCTA	120
TCATTGCTCT GGCGCAGGGT CGTGCAAAAG TAAAAATAT TTCATTTGAA ACAGCCCTAG	180
GCCTAATTGA TTTCTATGAA AAAAATTATG AAAAATTGA AGATTAATCT TTGGATAACG	240
GCGGATTCTT GACCTTCAAG TAGTAGAGAT AGAGAATCTG CCTTTTCATT TTGAGGACAG	300
CAAAAAGACT GCACGGTTGA TGCAGCCTTT TCTTTTATT TGAGATAGCG TTGAAGGAAC	360
TCTTTTGTTT GGTCTTCTTT AGGATTGGTG AAGAGGTCCT CTGGTTTACC TTCTTCAGCG	420
ATCACGCCCT TATCCATAAA GATAACACGG TGAGAGACAT CACGGGCAA TTCCATTTCA	480
TGGGTTACGA CAATCATGGT CAAGCCTTCC TGAGCCAGGT CCTGCATGAT TTTGAGGACT	540
TCTCCAACCA TTTCTGGATC GAGAGCTGAT GTTGGTTCAT CAAAGAGAAT AGCGTCCGGA	600
TTCATGGAGA GGGCACGAGC GATGGCCACA CGTTGTTTTT GACCACCTGA GAGTTGTTTT	660
GGTTTGGCTT GCCAGTAGCG TTCTCCCATG CCGACCTTTT CCAGGTTTTC TTTGGCAATC	720
TTTTCAGCTT CTGTGCGTTC GCGTTTTAGG ACAGTTGTCT GAGCGACGAT TGTGTTTTCA	780
AGAACATTGA GATTTTCAA GAGGTAAAG GATTGGAAAA CCATCCCCAA CTTTTCACGG	840
TATTGCGTGA GGTTCATAGCC TTTTTCGAGG ACGTTTTGTC CATGATAAAG GATTGTGTTCA	900
TCAGTTGGTG TTTCAAGTAG GTTAATGGAG CGTAGGAAGG TCGATTTTCC GCTTCCAGAG	960
CTTCCGATGA TAGAGATGAC CTCTCCCTTG TGGACAGTGA GTGAAATGTC TTTTAGCACT	1020
TCGTTTTGTC CATAGGATTT TTTGAGGTGT TTAATTTCAA GGATTGCTTG TGTCATTATT	1080
TCAAATCCTC CGTTTGCAAT TGGTTAGCAC CTGTAGTGTA GGTATCCATG TCCATTCTGC	1140

GCTCGATAAA GCGTAGGATA CGTGTACGG TGAAGGTGAG GACAAAGTAA ATCACGGCGA	1200
TGATTGTAAA TGCTGGAAG TATTGATAGG TTTGTGTTGC CACGGTATTT CCTGAGAAAT	1260
AAAGTTCGAC AACAGAGATA ACGTTCAATA CAGATGTATC TTTGATATTG ATGACAAATT	1320
CATTACCACT TGCAGGTAGG ATGTTACGGA CTACCTGAGG TAGGACAATC TTACGCATGG	1380
TCTGGTTATG GGTACATACCA AGAGCAGTCG CAGCTTCAAA TTGTCCCTTG TCAACTGCTA	1440
GGATACCACC ACGGACGATT TCAGTCATGT AGGCACCGGT ATTGATTGAA ACGATGAAGA	1500
TAGCAGCCAG TGTACGGTCA AGGTTGATCC CGAAAGCTTG GGCAGTTCCA TAGTAGATAA	1560
CCATCGATTG AACAAATCATT GCGTACCAC GGAAAATTTT AATGTAGACA TTGAGAACCC	1620
AGCCGACTAG TTTTGTAGG CCGTAAATGA CTTTGTTTTC AGAGAGAGGA GCAGTACGGA	1680
AGACACCAAT GGCAAGTCCA ATAATGAGAC CTATGATGGT TCCGACGATA GAGATTAAAA	1740
GAGTGATACC AGCACCACGC AAGAGTTGTT GCCAGTTTTC AGAAAGAATT TTAGCAACTT	1800
GGCTAAAGAA ACTACTGCTA GTCTCTTCAG TTGTGTAGC TTCGGCAGGT TGTTCCCTGA	1860
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CAGTTTGAAT ACCAGTTCT ACTTGAATCA TCTGAACTT AGAGTTCGCA GCTTCAGCAG	2040
TCAGTGCTTC TGGACGTTCA GAAACATAAG CATCAATGAC ACCAGCCTCA AGAGCTTGTC	2100
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ACTAGTGGAG AACATACAAT TGTACGCGGA GATGGGCAAA GTTACCAGAT GTTTACAGAT	16020
AAGACAGTTT ATGAAAAAGG TGCTCCTGCA GCTTTCCAG TTAACCTGA AAAATATTCT	16080
GAAATGAAGG CGGCTGGTTA TGCAGTTATA GCGATCCAA TTAATGGTGG ATATATTTGG	16140
CTTAATTGGA GAGAGAGTAT TCTGGCTTAT CCGTTTAATT CTAATACTGC TAAAATTACC	16200
AATCATGGTG ACCCTACAAG ATGGTACTAT AACGGGAATA TTGCTCCTGA TGGGTATGAT	16260
GTCTTTACGG TAGGTATTGG TATTAACGGA GATCCTGGTA CGGATGAAGC AACGGCTACT	16320
AGTTTTATGC AAAGTATTTT TAGTAAACCT GAAACTATA CCAATGTTAC TGACACGACA	16380
AAAATATTGG AACAGTTGAA TCGTTATTTT CACACCATCG TAACTGAAAA GAAATCAATT	16440
GAGAATGGTA CGATTACAGA TCCGATGGGT GAGTTAATTG ATTTGCAATT GGGCACAGAT	16500
GGAAAGATTG ATCCAGCAGA TTACACTTTA ACTGCAAACG ATGGTAGTCG CTTGGAGAAT	16560
GGACAAGCTG TAGGTGGTCC ACAAATGAT GGTGGTTTGT TAAAAAATGC AAAAGTGCTC	16620
TATGATACGA CTGAGAAAAG GATTCGTGTA ACAGGTCTGT ACCTTGGAAC GGATGAAAAA	16680
GTTACGTTGA CCTACAATGT TCGTTTGAAT GATGAGTTTG TAAGCAATAA ATTTTATGAT	16740
ACCAATGGTC GAACAACCTT ACATCCTAAG GAAGTAGAAC AGAACACAGT GCGCGACTTC	16800
CCGATTCCTA AGATTCGTGA TGTGCGGAAG TATCCAGAAA TCACAATTTT AAAAGAGAAA	16860
AAACTTGGTG ACATTGAGTT TATTAAGGTC AATAAAAAATG ATAAAAAACCT ACTGAGAGGT	16920
GCGGTCTTTA GTCTTCAAAA ACAACATCCG GATTATCCAG ATATTTATGG AGCTATTGAT	16980
CAAAATGGCA CTTATCAAAA TGTGAGAACA GGTGAAGATG GTAAGTTGAC CTTTAAAAAT	17040

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CTGTCAGATG GGAAATATCG ATTATTTGAA AATTCTGAAC CAGCTGGTTA TAAACCCGTT	17100
CAAAATAAGC CTATCGTTGC CTTCCAAATA GTAAATGGAG AAGTCAGAGA TGTGACTTCA	17160
ATCCTTCCAC AAGATATACC AGCGGGTTAC GAGTTTACGA ATGATAAGCA CTATATTACC	17220
AATGAACCTA TTCCTCCAAA GAGAGAATAT CCTCGAACTG GTGGTATCGG AATGTTGCCA	17280
TTCTATCTGA TAGGTTGCAT GATGATGGGA GGAGTTCTAT TATACACACG GAAACATCCG	17340
TAAAGTGTAG AAATGATAAT ATCTATGTTT TGAACGATAC TTTTAAGAAG TAGCACTCAA	17400
GAAGAGATTT AAGTTTACTT GGTGAAACCT GTTTTATTCG TAAGTAACT ATCATTGAAA	17460
GGGGAGATGT TTTCGAAAAC TTGCACAGAA AAAGGATTAT TATTGTCATG TGTAAATTCAT	17520
TACATTGCTC ACAGTTGATT TTAAGAGATA TGAATAAGGA GAAATCATGA AATCAATCAA	17580
CAAATTTTAA ACAATGCTTG CTGCCTTATT ACTGACAGCG AGTAGCCTGT TTTCAGCTGC	17640
AACAGTTTTT GCGGCTGGGA CGACAACAAC ATCTGTTACC GTTCATAAAC TATTGGCAAC	17700
AGATGGGGAT ATGGATAAAA TTGCAAAATGA GTTAGAAACA GGTAACATATG CTGGTAATAA	17760
AGTGGGTGTT CTACCTGCAA ATGCAAAAGA AATTGCCGGT GTTATGTTTCG TTTGGACAAA	17820
TACTAATAAT GAAATTATTG ATGAAAATGG CCAAACCTCTA GGAGTGAATA TTGATCCACA	17880
AACATTTTAA CTCTCAGGGG CAATGCCGGC AACTGCAATG AAAAAATTAA CAGAAGCTGA	17940
AGGAGCTAAA TTTAACACGG CAAATTACC AGCTGCTAAG TATAAAATTT ATGAAATTCA	18000
CAGTTTATCA ACTTATGTCG GTGAAGATGG AGCAACCTTA ACAGGTTCTA AAGCAGTTCC	18060
AATTGAAATT GAATTACCAT TGAACGATGT TGTGGATGCG CATGTGTATC CAAAAAATAC	18120
AGAAGCAAAG CCAAAAATTG ATAAAGATTT CAAAGGTAAA GCAAATCCAG ATACACCACG	18180
TGTAGATAAA GATACACCTG TGAACCAACA AGTTGGAGAT GTTGTAGAGT ACGAAATTGT	18240
TACAAAAATT CCAGCACTTG CTAATTATGC AACAGCAAAC TGGAGCGATA GAATGACTGA	18300
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AGGTGATTAT GCTCTAACAG AAGTAGCAAC TGGTTTTGAT TTGAAATTAA CAGATGCTGG	18420
TTTAGCTAAA GTGAATGACC AAAACGCTGA AAAAAGCTGT AAAATCACTT ATTCGGCAAC	18480
ATTGAATGAC AAAGCAATTG TAGAAGTACC AGAATCTAAT GATGTAACAT TTAATATGG	18540
TAATAATCCA GATCAGGGA ATACTCCAAA GCCGAATAAG CCAAATGAAA ACGGCGATTT	18600
GACATTGACC AAGACATGGG TTGATGCTAC AGGTGCACCA ATTCCGGCTG GAGCTGAAGC	18660
AACGTTTCGAT TTGGTTAATG CTCAGACTGG TAAAGTTGTA CAAACTGTAA CTTTGACAAC	18720
AGACAAAAAT ACAGTTACTG TTAACGGATT GGATAAAAAAT ACAGAAATATA AATTCGTTGA	18780
ACGTAGTATA AAAGGTATT CAGCAGATTA TCAAGAAATC ACTACAGCTG GAGAAATTGC	18840

TGTCAAGAAC TGGAAAGACG AAAATCCAAA ACCACTTGAT CCAACAGAGC CAAAAGTTGT	18900
TACATATGGT AAAAAGTTTG TCAAAGTTAA TGATAAAGAT AATCGTTTAG CTGGGGCAGA	18960
ATTTGTAATT GCAAATGCTG ATAATGCTGG TCAATATTTA GCACGTAAAG CAGATAAAGT	19020
GAGTCAAGAA GAGAAGCAGT TGGTTGTTAC AACAAAGGAT GCTTTAGATA GAGCAGTTGC	19080
TGCTTATAAC GCTCTTACTG CACAACAACA AACTCAGCAA GAAAAAGAGA AAGTTGACAA	19140
AGCTCAAGCT GCTTATAATG CTGCTGTGAT TGCTGCCAAC AATGCATTG AATGGGTGGC	19200
AGATAAGGAC AATGAAAATG TTGTGAAATT AGTTTCTGAT GCACAAGGTC GCTTTGAAAT	19260
TACAGGCCTT CTTGCAGGTA CATATTACTT AGAAGAAACA AAACAGCCTG CTGGTTATGC	19320
ATTACTAACT AGCCGTCAGA AATTGGAAGT CACTGCAACT TCTTATTCAG CGACTGGACA	19380
AGGCATTGAG TATACTGCTG GTTCAGGTAA AGATGACGCT ACAAAAAGTAG TCAACAAAAA	19440
AATCACTATC CCACAAACGG GTGGTATTGG TACAATTATC TTTGCTGTAG CGGGGGCTGC	19500
GATTATGGGT ATTGCAGTGT ACGCATATGT TAAAAACAAC AAAGATGAGG ATCAACTTGC	19560
TTAAGTAAGA GAGAAAGGAG CCATTGATGA CAATGCAGAA AATGCAGAAA ATGATTAGTC	19620
GTATCTTCTT TGTATGGCT CTGTGTTTTT CTCTTGATG GGGTGCACAT GCAGTCCAAG	19680
CGCAAGAAGA TCACACGTTG GTCTTGCAAT TGGAGAACTA TCAGGAGGTG GTTAGTCAAT	19740
TGCCATCTCG TGATGGTCAT CGGTGCAAG TATGGAAGTT GGATGATTCG TATTCCTATG	19800
ATGATCGGGT GCAAATTGTA AGAGACTTGC ATTCGTGGGA TGAGAATAAA CTTTCTTCTT	19860
TCAAAAAGAC TTCGTTTGAG ATGACCTTCC TTGAGAATCA GATTGAAGTA TCTCATATTC	19920
CAAATGGTCT TTAATATGTT CGCTCTATTA TCCAGACGGA TGCGGTTTCT TATCCAGCTG	19980
AATTTCTTTT TGAAATGACA GATCAAACGG TAGAGCCTTT GGTCAATTGTA GCGAAAAAAA	20040
CAGATACAAT GACAACAAAG GTGAAGCTGA TAAAGGTGGA TCAAGACCAC AATCGCTTGG	20100
AGGGTGTCGG CTTTAAATTG GTATCAGTAG CAAGAGATGT TTCTGAAAAA GAGGTTCCTT	20160
TGATTGGAGA ATACCGTTAC AGTTCTTCTG GTCAAGTAGG GAGAACTCTC TATACTGATA	20220
AAAATGGAGA GATTTTGTG ACAAATCTTC CTCTTGGGAA CTATCGTTTC AAGGAGGTGG	20280
AGCCACTGGC AGGCTATGCT GTTACGACGC TGGATACGGA TGTCCAGCTG GTAGATCATC	20340
AGCTGGTGAC GATTACGGTT GTCAATCAGA AATTACCACG TGGCAATGTT GACTTTATGA	20400
AGGTGGATGG TCGGACCAAT ACCTCTCTTC AAGGGGCAAT GTTCAAAGTC ATGAAAGAAG	20460
AAAGCGGACA CTATACTCCT GTTCTTCAAA ATGGTAAGGA AGTAGTTGTA ACATCAGGGA	20520
AAGATGGTCG TTTCCGAGTG GAAGGTCTAG AGTATGGGAC ATACTATTTA TGGGAGCTCC	20580

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AAGCTCCAAC TGGTTATGTT CAATTAACAT CGCCTGTTTC CTTTACAATC GGGAAAGATA	20640
CTCGTAAGGA ACTGGTAACA GTGGTTAAAA ATAACAAGCG ACCACGGATT GATGTGCCAG	20700
ATACAGGGGA AGAAACCCTT GTATATCTTG ATGCTTGTG CCATTTTGTT GTTTGGTAGT	20760
GGTTATTGTC TTACGAAAA ACCAAATAAC TGATATTCAA TGTACATCAT TATGAATAGG	20820
ATAGCAGGCT GAAGGGAAGA CCAGAGTACT CTGAGGTGAT GTTAATCAGG AATCATGGTG	20880
ATGTGGCATG AATCATCAAT AACGGATATG AGGCTGGCA GATTGTGCCA GCCTCATGTG	20940
GGGTATTGTT TTGTAAAACG ATAGGACTGG TCTGGTAATC ATTTTA	20986

(2) INFORMATION FOR SEQ ID NO: 55:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21040 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 55:

CCCAGCAAAA AGCCATCCGA AGATGACTTT TTTGCTATTT AATTCTGTGA TAAGTTACTT	60
CCAAGCCACG CTTAACAGCT GGACGATTGG CAATTTTTC TGCCCATTTT ACTAGATTTT	120
GATAAATTGA GGCATCCAAG AATTTTGCGAG AACCTTGGTA AAGATTTCTT TGAACAACT	180
GTCCATACCA AGACCAGATA GCAATATCTG CAATCGTATA GTCATTGCCT GCAATATAAG	240
GTTTCTGAGC CAATTCCTTA TCCAATAAAT CCAACTGGCG TTCACTTCC ATCGTAAAAC	300
GGTTAATAGG ATATTCCAAT TTTTCAGGAG CATAATTGAA GAAATGTCCA AATCCCCAC	360
CTAGAAAAGG TGCTGCACCT GCTTGCCAGA ATAGCCAATT CAAAATTCT ACCTTTTCCA	420
CAGGATTACT TGGTAAAAAG GCTCCAAATT TCTCAGCAAG GTAAAGAAGA ATATGAGCAG	480
ACTCAAAGAC TCTTACGTTT TCAGTACCTG ACTGGTCCAA TAAGGCTGGA ATCTTGGAAT	540
TTGGATTGAG CTTCACAAAG TCTGATCCGA ATTGATCCCC ATCCATGATA GCAATCTTAT	600
ACAAGTCGTA AGCCGCTTCC TTAAAACCAG CTTCTAGTAA TTCTTCCAAT AAGATAGTAA	660
CCTTCACACC ATTTGGTGTT CCCAGTGAAT AAAGCTGAAA AGCTTGTCT CTTTTGGCA	720
AGTTTGTTC GAAACGGGCA CCTGCTGTTG GTCTGTTTAG CCCCCTAAAA GCTCCTTGAT	780
TACTAGCTTC ATCCTGCCAT ACGGTCGGTA ATTGATATGC TGACATCCGA AACCTCCCTT	840
AAATCGCATT CTTGTCAAAA CCGAGTTTGC GTTGAATAAA CTTAACGATT TCGACGATGA	900
TAATCATTGA GAAGCTTCCA GCCATAACAA TTCCCCATTG TGACAAGTCT AGTTTGGTTA	960
CGTGAAGAT TCCTTCAAGC GGTCTTACAA CGATTGTTGC CATGAGAAGG ATAAAGGATA	1020

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CCAAGATGGA CCAGTTAAAG GTCTTAGACT TGAATGGGCC AACTGTCAAG ATGGATTGGT	1080
AGACAGACTT GACATTGTAG GCATGGAAGA GCTGAATCAA ACCAAGGGTT GCAAAGGCCA	1140
TCGTTAGGGC ATCTGCATGA ATAGCATGAT TGTCACCCAC ATGAACTGGG TAAGCAATCG	1200
CAAGGCCATA AACACTCATA ACAAGAGCTG CTTGGAGTAC ACCTTGATAA ATGATAGAAC	1260
TCAAAACACC ACCTGAGAAG AAGCTTGCCT TCGTCCACG TGGTTTATGA TTCATGACAC	1320
CAGGTTCCGC AGGTTCAACA CCAAGAGCGA TAGCTGGGAA GGTATCCGTT ACCAAGTTGA	1380
TCCACAAAAG ATGAACCGGC TGTAAACAT CCCAACCAA CAAGGTTGAT AGGAAGATGG	1440
TTAATACTTC AGCAGTATTA GCAGAAAGTA GGTACTGAAT AGTCTTTTGA ATGTTTGAGA	1500
AGACCTTACG TCCTTCTTCC ACTGCGACGA TAATAGTCGC AAAGTTATCA TCTGCAAGAA	1560
TCATATCAGA AGCCCCCTTA GAAACCTCTG TACCAGTGAT TCCCATACCG ATACCGATAT	1620
CGGCTGTTTT CAGAGCTGGC GCGTCATTGA CACCGTCACC TGTCATGGCA ACGACTTTAC	1680
CTTGTTTTTG CCAAGCCTTG ACGATACGAA CCTTGTGTTT TGGAGACACA CGGGCATAAA	1740
CAGAGTATTG ACCAACGACT TTTTCAAATT CTTCATCTGA CAGTTCATTG AGTTCAGCAC	1800
CAGTTAAAC GTGACCTTCT GTATCGTTTG CGTCAATGAT TCCCAAACGT TTGGCAATGG	1860
CTTCCGCTGT GTCTGGTGG TCACCTGTAA TCATAATTGG ACGGATTCCC GCTTCCTTAG	1920
CCACACGAAC AGCCTCAGCG GCTTCAGGAC GTTCAGGGTC AATCATCCCA ATCAAACCG	1980
TAAAAATTAA ATCATTTTCA AGCTCTTCAG AAGTGAGATT TTCTGGAATA CTATCGATAA	2040
TCTTATAAGC ACCTGCAAGG ACACGCAAGG CTTGATGAGC CATTTCAGAA TTGTTTGTAC	2100
GAATGAGATT TGTAACCTTC TCATCAATCG GAGCAATATC CCCAGCCTTA TCACGAAGAA	2160
GACAACGTTT TAAGAGTTGG TCTGGCGCAC CCTTGACTGC TACAAGGAAA CGACCATCTG	2220
GCAATGGGTG AACTGTTGAC ATGAGCTTAC GGTGAGATC AAATGGCAAT TCAGCTACAC	2280
GAGGATATTT CTCTAAGAAA CCTTTGACAT CATAGCCCTT GTCCAAGGCA TATTGGATAA	2340
AGGCTGTTTC GGTGGGTCA CCAATCAAGT TACCTCCAC ATCGATTTTC GTATCATTTGG	2400
CCAAGACAAC TGAACGAAGT AGTGGCATT TCAAGCCTAG TTCAATATCA TCAGCTGAGT	2460
CATGTAGAAC CGCATCGTAG AAGACTTTTT CGACTGTCAT CTTGTTTATA GTCAGCGTAC	2520
CAGTCTTATC AGAAGCGATG ATTTCAAGTTG AACCAAGTGT TTCAACTGCT GGCAACTTAC	2580
GAACGATGGA ATGTCGTTTG GCCAAAACCTT GAGTACCAAG AGAAAGAACG ATGGTAACGA	2640
TAGCAGGAAG TCCTTCTGGA ATGGCTGCAA CGGCAAGGGC AACAGAAGTC AACAACTCAC	2700
CAAGTGGATT TTCCCTTGA ATGAAGACAC CCACTACAAA AGTAACAAGG GCAATGACCA	2760

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AGATAGCATA	GGTCAAGACC	TTAGAAAGGT	TGTTCAAATT	TTGTTTGAGT	GGTGTATCAG	2820
TCTCATCCGC	ATCTTGAAGC	ATACCAGCAA	TATGACCAAC	TTCAGTGAC	ATACCTGTAT	2880
TGACAACAAC	ACCCATCCCA	CGACCATAGG	TTACGTTTGA	GTTTTGGAAG	GCCATGTTGA	2940
CACGGTCACC	AATACCAGCA	TCTGTCGCAA	GCTCGACTGA	CAAGTCTTTT	TCGACTGGTA	3000
CAGATTCACC	TGTCAAGGCT	GCTTCTTCAA	TTTTAAGAGA	GTTGGCTTCT	ATCAAACGTA	3060
GGTCCGCTGG	TACCACGTCA	CCTGCTTCAA	GGGCAACGAT	ATCGCCTGGT	ACCAATTCTT	3120
TAGAGTCAAT	CTCTGCCATG	TGTCCATCAC	GAAGAACGCG	GGCAACTGGA	CTAGACATGG	3180
ATTTGAGGGC	TTCAATAGCT	TCTTCAGCTT	TTCTTCTTGG	GTAAACACCA	AAGGCAGCGT	3240
TGATGATAAC	CACAGCTAGG	ATGATAATGG	CATCTGCGAT	ATCTTCCCCA	CCAGAAGTCA	3300
CGACTGACAA	GATTGctGCC	GCAACTAGGA	TGATAATCAT	CAAATCCTTA	AATTGCTCGA	3360
TGAATTTGAC	CAAGATTGAT	CGTTTCTCGC	CTTCTTCGAG	TTCATTGTGC	CCAAATTCGG	3420
CAAGGCGCTT	TTCCGCCTCA	CTTGATGACA	AACCTTGCTC	GGTCGCATCC	ACAGCCTGCA	3480
AGACCTCTTC	AGGGCTCTGA	GTATAAACG	CTTGGCGTTT	TTGTTCTTTT	GACATGTGTC	3540
TCCTCCTTGA	CATTGTGTGC	AAAACAGACT	CTCTTCTGT	CATAGCTTTT	CACGACAAAC	3600
AAAAAGAAAC	CTGTTAATCA	TAACAAGTCT	CGCTGTTTAA	GATAGGGCCG	GAAAGCATAC	3660
TTTTCAGCAT	AAAATTCGGA	ATGACGACAC	TATCACAGGT	TTCTGCCAGC	TACTCCCTTG	3720
AGTAGTACCA	TTATACCAA	TTTTGGGGAG	TTTTCAAAGA	GTAAAACTG	CCTTATTGTA	3780
ATTTTTCCTT	GAAGACAGT	ATAATGGTAG	AATGCTATGT	GAAGTGAAT	GAAGTGAAT	3840
GAAGCAATCT	ATCTCAAATC	TCAAGTTAGC	TGAGCGTGGA	GCCATTATCA	GTATTTGAC	3900
CTATTTGATC	TTGTCTGCAG	CCAAATTAGC	AGCTGGTCAT	CTCCctCATT	CATCCAGTTT	3960
GGTGGCCGAT	GGTTTAAATA	ACGTATCGGA	CATCATTGGA	AATGTGGCCC	TCTTAATCGG	4020
GATTCCGATG	GCGCGCCACC	TGCAGACCGT	GACCACCGTT	TTGGTCATTG	GAAGATTGAA	4080
GATTTGGCAA	GCTTGATCAC	TTCTATCATC	ATGTTCTATG	TCGGTTTCGA	TGTTCTAAGA	4140
GATACCATTG	AAAAGATTCT	CAGTCGGGAA	GAAACGGTCA	TTGATCCTCT	TGGTGCAACT	4200
CTAGGAATCA	TTCTGCGAGC	GATTATGTTT	GTGGTCTATC	TCTACAATAC	TCGCCTCAGT	4260
AAGAAATCCA	ACTCCAATGC	GCTGAAGGCA	GCTGCTAAGG	ACAATCTTTC	TGACGCTGTT	4320
ACCTCACTTG	GAACCGCCAT	TGCCATCCTA	GCTAGTAGTT	TCAATTATCC	GATTGTGGAT	4380
AAACTGGTTG	CTATCATCAT	CACTTTCTTT	ATCTTGAAGA	CTGCCTATGA	TATCTTCATC	4440
GAGTCTTCCT	TTAGTCTTTC	AGATGGCTTT	GACGACCGCC	TGCTCGAGGA	CTACCAAAG	4500
GCTATCATGG	AAATCCCAA	AATCAGCAAG	GTCAAATCGC	AAAGAGGTCG	CACCTACGGT	4560

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AGCAACATCT	ACCTGGATAT	TACACTAGAG	ATGAATCCTG	ACTTGTCTGT	TTTTGAAAGC	4620
CATGAAATCG	CGGATCAGGT	CGAGTCTATG	CTGGAGGAGC	GTTTTGGCGT	CTTTGATACC	4680
GATGTCCATA	TCGAACCAGC	ACCTATCCCT	GAGGATGAAA	TTTGTAGACAA	TGTCTATAAA	4740
AAATTGCTTA	TGCGTGAACA	ATTGATTGAC	CAAGGAAACC	AACTAGAAGA	ACTCTTGACT	4800
GATGATTTTG	TCTATATTCG	CCAAGATGGA	GAGCAGATGG	ATAAAGAGGC	TTATAAGACC	4860
AAAAAAGAGT	TAAATCTCTG	TATCAAGGAC	ATTCAAATTA	CTTCCATCAG	TCAAAAAACC	4920
AAACTCATCT	GCTATGAGTT	AGATGGTATC	ATCCATACCA	GTATCTGGCG	TCGCCACGAA	4980
ACCTGGCAAA	ATATCTTTCA	TCAAGAAACC	AAAAAGAAT	AGAGAAATCC	TTTCATGAGA	5040
CGGGATTTTT	CTATCTTTT	ATACTCAATA	AAAATCAAAG	TGCAAATTAG	GAAGCCGGTC	5100
ACAGGCTGTA	CTTGAGTCGG	CAATGTGAAG	CCGACATAGT	TGCACTTTTG	ATTTTCGAAT	5160
AGTCTTAACT	ATCAAATTCA	CTGAGATACT	CATAGCGTTC	GTATTTTTC	AGGAGTGCTT	5220
CATTTTCTCT	ATCCAATTCT	TTTGTGAGAG	TAGCCAGCTT	ACCAAAGTCA	GAGCCGTTAG	5280
CCTGCATTTT	CTCTCAATA	GCAGCGATAC	GTTTTTCCAA	GGTTTCAATA	TCACCTTCAA	5340
TACTTGCCCA	CTCCTGCTTT	TCTTGGTAGG	TCATGCGTTT	CTTGTCTTCT	CGAACCTTGA	5400
CCACTTTTTT	CTTTTCGGCC	TTTTGCACTT	GATTGGCCAT	ATCTGTTTCA	AAAGCTTTTT	5460
CATCAAGATA	GTCGGTGTA	TGACCAAGA	AAGGACGAAT	CTTGCCATCC	TCAAAAGCGA	5520
GAATCTTGGT	CGCTACCTTA	TCCAAGAAAT	AGCGGTCGTG	ACTGACTGTT	AAAACGGGAC	5580
CTGCAAAACC	TTGCAAGAAA	TTCTCTAAGA	CTGTCAAAGT	TGCAATATCT	AGGTCATTGG	5640
TTGGCTCGTC	TAAAAGAAGA	ACATTTGGTT	TTTCCAAAAG	CAGTTTGAGG	AGATAAAGAC	5700
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GGAATTGCTC	CAGCAACTCA	GCGATGGAAG	TCGTAGAACC	ACCACTGGTC	TTGACCTCCT	5820
CTGCCACTTC	CTGCAGGTAA	TTGATCACAC	GCTTGCTTTC	ATCCAAACCC	TCAATTTGTT	5880
GAGAGAAATA	GGCGATGCGA	ACAGTTTCCC	CAATCACAAC	TTGTCCTGCT	GTCGGCTCAA	5940
GACTTCCTGC	AATCAGGTTA	AGTAGGGTTG	ATTTTCCAAC	ACCATTGTCC	CCAACAATTC	6000
CAATACGGTC	TTTAGCCTGA	ACTAAGAGAT	TAAAATTTTG	CAAAATGGGC	TTATTTTCAT	6060
AGGCAAAGGA	AACATCCTGA	AACTCGATGA	CTTTCTTCCC	AATCCGACTG	GTTTCAAAGT	6120
TCATAGTCAA	GTCTGTCTCA	GCACTACTGC	CTGAAACTTC	CTTTTTCAGA	TCATGGAAC	6180
GATTGATACG	AGCTTGTTGC	TTGGTCGCAC	GCGCCTGCGG	TTGTCTGCGC	ATCCAGGCCA	6240
ATTCTTGTTT	GTAGAGTTGT	TCTTTTTTGT	GAAGAAGAGC	CGCGTCGCGC	TCATCCTGTT	6300

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CCGCCTTTAG GCGAACATAG TCCTGGTAAT TTCCCTGGTA CTCGGTCAAG CCTGCACGAT	6360
CCAACCTCGAA AATCCGTGTT GACAAAGCGT CTAAGAAATA ACGATCGTGA GTGATAAAAA	6420
GGACGGTCTT CTTAGAATTT TTCAAAAAGA GGGTCAGCCA CTCAATAATC GCAATATCCA	6480
GATGGTTGGT CGGCTCATCC AAAAGCAAGA GGTCTGGTT GCCAAGTAAG ACTTGTGCCA	6540
ACTGTACCCG TCTTCTCAGA CCACCTGACA ATTCCCCAAC AGGAGTAGAT AAGTCTTGAA	6600
TGCCCCAATTT GCTAAGAACG GTCTTGACCT GACTTTCGAT TTCCCAAGCT TGGAGAGAGT	6660
CCATCTCTGC CATGACACGT TCCAAACGCG CCTGCTTGTC CTCACTATAG TCGAGCATAA	6720
TCAATTCATA CTCACGAATG AGCTGGATTT CCTTGAGTTC ACTAGATAGA ACCGTATCCA	6780
AAACTGTCTT TCTATCATCA AAATCAGGAT CCTGAGTCAA GTAACCAATC TGGTAATCAT	6840
TTTtagctga AAAAGGACTG ACATCCCCAT CAAATCCAGA AACACCAGAA AGGACGTCCA	6900
AAAGGGTGGT.CTTGCCAGTC CCATTGACAC CGATTAAACC AATTCTGTCT AAGTCATGGA	6960
TAATAAAGGA AATATCCCTA AAAACGGTCT TGTACCAAC GGATTTACTT AGTTTTTCAA	7020
CGATAAAATC ACTCATTTTT TCTCCCTCAG GTAAGCATGG ATGGCTTAC GATTATPCTC	7080
CAATTCTCCA TCGACAATGG CAAACTCAAT CTCTGTTAAA ATCTCTCCCA AGTCTGGGCC	7140
TGGCTGATAG CCATATTCCT TGATCAAAAT ACCGCCATTA ATCTGAATCT CTTTCTTGTC	7200
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AGCTTGACGA AGATTTCAG CCTGTAAAAG CAAATCTATG TCAAAGCGAT AACAATCTCG	7320
CTTGCTCAAT TCTCCATTTT CACGCAGAGC CAAAATAATC AGCAAATCCT GAACTTGCTT	7380
GGCAAACCTGG CGTGAGGTCT TCCAAGATTT CAAAATGAC TGCGCATTTT CAATCTCCAA	7440
AGCCCATAGT AAAGCCGCCC AGGCTTGTTT AGAGGATTC AAGTAAAAT CAGTCTCCAA	7500
ATCAAACAGT CTGTTGAGCT TGTCTGGCT AGATGCCATA TCAGGGAGAT AGTCATAAGC	7560
TTGACTCTCA ATCATGGAAG CCAAGCCCCT TCTCCAAAAT GGAGCCAGCA AGAGTTTATC	7620
AAACTCGACG AAGGTACGCT CTACAGAAAT TTTCTCCAAA AGCGGCGTCA AGGTCTTCAT	7680
AGCTTTAAAT GTTTCTGGCT CAAGTGCAA ACCAAGACTA GCCTGAAAAC GGAAACCACG	7740
CATAATCCGT AAAGCATCTT CGTTGAAACG CTCAC TAGCC ACTCCAAC TGCTCGAAGAC	7800
TTGCTTTTCC AAATCTTCTA AACCATGGAA CAAGTCAACG ATTTCTCCTG TCTCATCCAA	7860
GGCAAAGGCG TTGACTGTGA AATCACGGCG TTTGAGGTCT TCTTCTAGCG ATCGTACAAA	7920
GGAAACCGCA CTGGGTCTGC GATAGTCCAC ATAGACATCC TCTGTCCGAA AGGTTGTTAC	7980
CTCATACTCC TCATCCCCAT CTAAGACCAA GACGGTTCCA TGCTCGATTG CGATATCGGC	8040
TGTTGCGGGA AAAATCTGCT TGGTCTCTTC TGGATAAGAA GACGTCGCAA TATCCACATC	8100

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GTGGATAGGG CTATGGAGAA GGGCATCTCG AACAGAGCCC CCAACAAAAT AAGCCTCAAA	8160
GCCTGCTTCT TTAATTTTTT CTAATACTGG TAAAGCCTTC TGAAATTCAG AAGGCATTTG	8220
CGTTAATCTC ATAATAAGTG TTCTAATCCA TAGACAAGCT CATGACGCTT GACAACTTCT	8280
TTAATTCCCA AATTGACTCC TGTCAATGAG GAGATGCGAT CATAGGAGTC ATGACGGAGG	8340
GTCAACCCTT CTCCCTGATT GCCAAAGATG ACTTCCTGAT GAGCTACCAA GCCTGGCAAA	8400
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TCCTCATCTG CTGCACCTTG CTGAATTGAC TCTCGAACCT CTGCCATCAA CTCAGCTGTT	8520
TTAATGGCTG TTCCAATCGG AGCATCCTTT TTCTTGTCAT GATGGAGCTC AATAATCTCC	8580
ACATTTGGGA AATATTTGGC AGCCTGCGTC GCAAATTGCA TGAGTAAGAC AGCACCCAAG	8640
GCAAAGTTAG GGGCAATCAG GCCACCCAAG TCTTGGGCAC GAGAAAATTC TTTTAGCTCT	8700
GCAATTTCTT CACTCGTGAA ACCAGTCGTT CCAACTACTG GAGCAAAGCC ATTTTCAAGA	8760
GCAAAACGTG TATTTTCGTA GGCAACAGCT GGAGTAGTAA AATCTACCCA GACATCCGCT	8820
TCAAAACCAG CTAAATCAGC CTTATCCTTG AAAACAGGAA TACCCTGCCA TTCTGACTCA	8880
GACTCAAAAG GATCCAAAAC TGCCACCAAG TCCAAGCTG GATCAGTCAA TACCATCTGA	8940
CAAGCAGCCT GGCCCATCTT TCCCTTAAAA CCGGCAATAA TTAATCGAAT ACTCATCTCT	9000
ACTCTGTCT AAGATACAAA GTCCGTAAGA ACACAAAGTG AAAATAGGAA TTCCAATCAA	9060
GAAGTGTCTA CTTCTTGGA GAACTATCTT TTTCACACAG GGTTCAGGC GTGTTCAATT	9120
ATCAAGATAC AAAGGACCTT AGCTGCCTCT GAAAAATAGG GAATGGCACT GACTTTCCAC	9180
GAAAGGCAAG ACAGGCATCT TTTTTCAGA GGCAGTAGT CCGTGTTCAT TTTCTAAGAT	9240
ACAAGGCATC TTAAGTAGCC TAGAAGCGCC AACTAAATCA CTGGAATATA ACCCAGAGCA	9300
ATACTTCCTG CTCCTAGGTG CGTTCCAATG AACTACCAA ATGTAGCAAG TGAAACATCC	9360
GAACCAAGC CAAAATCAAG CAAGTGCTGA CGCAATTTCT CAGCCTTTTC AGGAGCATTC	9420
CCATGAATGA CAATGACCCG GTATTGACCT GAAGCCGTTG TTTCTTGAT AATTTCAATT	9480
AAGCGCTTGG TGGCCTTCTT TTCAGTACGA ACTTTTTCGT AAATTTCAAT CACACCTTGA	9540
TCGTTAAAT AAAGGATTGG CTTAATGCTA AGCAAATTGC CAAAATGGC AGCCCCATTT	9600
GAAAGGCGTC CACCTTTTAC CAAATGATCC AAGTCATCTA CCATGATAAA GGCTGACGTA	9660
CGGCTGATTT GAATGGCTAG CTTATCCTGA ATGCTGGCAA AATCATCGCC CTGATCACGC	9720
CAATTAAAGA CGCTTTCAAC CATGATGCCT AGGGGAGCAC TTGTAATCAA AGTGTCTGGG	9780
AAAGCAATGG TTAAGCCCTC ATAGTCATCG ACCATATACT GGATATTTTG GTAAAAACCT	9840

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GAAATTCCAG AAGATAGGAA AAGCCCCAAG GCATGTGTAT AGCCTTGTTT TTTGAGCGAA	9900
GTTAAGATCT CATCTAACTT GGCAATACTT GGTGACTGG TCTTAGGCAA TTCAGAAGCC	9960
TGAGCCATTT TTTGGTAAAA TTCCTCAGCA GACAGATTGA TGCCTTCGAC ATATTCTCTCA	10020
CCATCAATAT TGACAGGAAT ATCCAAGACA AACAACTCTT CTCTTTGCAA GATCTCTGCA	10080
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TCCTGGTAAG TCTAATGCAA TTTCAGTCAC TTCGTAAGTC AAACGATTGA GCATGTTCAA	10200
ACATGGACGA GCCAAGGTTT CCACCTCTTC TTGGTTCAAT TCACTTGGTT CATTGACAAT	10260
ACGGCCATCG ATATGGTTTA CTGTGTAGAT TGTTCCTACT ATGACAAACT TATCAAATAC	10320
AATCATAAAG CTCAAGATGA CAATCAAGGA AGTCACCTGA TTTTCTTGGT CATGTTGGAG	10380
CAATTGGAAA TTCACATCCA CCTTGGTTTC AGGAGCTCCA TTTTCATTTT CCCATTCAAA	10440
ATTACGCGCA TCAAAATGAT ACTGACTAAC AAATCTTGT TCACGTTTAA GATTCATGTC	10500
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TTTCTAGGAT TTAGTCAATC CCAATTTTCA CACGAAGTAC ATCTGTGATG GTATCAACAT	10620
AGTAGTTTAC TTCTTCTGTT GTAGGCGCTT CTGCCATAAC ACGCAAGAGG GGTCTGTTC	10680
CACTTGGACG AACAAAGGATA CGGCCGTTCC CCGCCATTTC TTCTTCCATC TTCTCGATGA	10740
TGGCCTTGAT AGCTGGCACT TCCATGGCCT TTTCTTTCAT GACGTTTTC ACTCGGATAT	10800
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ATTGTCCTTT TTCAGAAAGG TATTTTCCGA TGATGTACAT AATCTTGTC CAATCAACGA	11160
TGTCACCATC CTCATCAACA GCAATCAAGC GGTCACTGTC TCCATCAAAG GCCAAACCAA	11220
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TGGATAATCT ACCAAAATTC CTAAGCCTTC TGCACTTGGA CGAGGAAGAG TGTCTTCCTC	11520
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GCCAAAGAAC TTGATTCCGT TATCAAGGCG TGGGTTGTGG CTAGCAGAAA TCATGACACC	11640

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TATTTTAAAT TCGTTTTTGA ACTAGTTGCT TTCGTTGACG AAGATGTCTC CGATGAACTG	12000
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ATAAGTAATA ATTTGATTGA TTAACCAAGA AATCGTAGTC AAACCAATCA TATTTGCAAG	13380

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GATTTGAGCT AAAATAAACA CCAAACTCC ACGTACCAAA ATCATAATCT TGGTTCCTGC	13440
AATAGCTTTT GTAAATGGT ATAAATATA AGCAACAATC AAAATATCAA TCAGATTGAT	13500
AGCTATCGTC CATGGACTTG CAAACAACT GGTCCAATAT TGCAGATTGG ATAATTGTTG	13560
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GCATTTTTTT CCCTATCCTA GTCCATTTTA CATTGAACAA AAATATGATA AAATAAACTG	13680
ACTAAAAAAA ACAAAGGAGA AACTATGTCT CAACTCTATG ATATTACCAT TGTGGGTGGT	13740
GGTCTGTGCG GGCTTTTTCG AGCCTTTTAT GCCCACCTAC GCCAAGCCAA GGTTCAAATC	13800
ATCGACTCTC TTCCCCAGCT AGGTGGACAA CCTGCTATTC TCTACCCTGA AAAGGAAATC	13860
CTAGACGTAC CAGGCTTCCC AAACCTGACT GGAGAAGAGT TGACTAACCG CTTGATTGAA	13920
CAGCTAAATG GATTTGATAC CCCTATTCAT CTCAATGAAA CGGTTCTTGA GATTGACAAA	13980
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AAACTGTTGG AGAAGGGAGG CAATTCCTTG CGCGTGGTCC AGATAAACAG AACTGATTTT	15180

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GCCAAAGAAA GAGTCTGCCA AGTGCAAATC ACTTAACAAA TCCTGCACCT TTTTCATCTGT	15360
AAAAACGGTA TAGACGCGAT TCTTGCGAAG ATTGCTCCGT TGGTGGTGAC GAATTTTCAGA	15420
TTTGATTTCA TAGAGATGGA GAAAGGACTC ATAGAGGTGA CGGGCCAGTT TGGCATTTC	15480
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GCGATTTCCA CATCTTTTTC CCGCAGACTT TTTAGAATGA CGGGACTTCC AGTCCCTCCA	16560
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TGTCGCGATG CCCTTCATTA ACAGACCAAT TCTTGGATAA GTCCTGCGCC AAGCGTTTAG	16680
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TACCTTCTTT TTGGTAACTT GGCAGAATCG GCTCAATCAA GGCCAATAAA TGTTGATAAA	16800
AGTCTTCTGA CTCAGGATGG TTCATGACAT AATCATAAAC AGGTTTCATCC ACACCCGTTT	16860
GGTTTCTCAG TTCTGGTAAA TAATAGGGAT TTGGCAAGAA ACGGACATCA AAGACCAAGT	16920

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CCGCATCAAT CGGGATTCCA TACTTAAATC CGAAAGACAT GACTTCGATA CGGAAAGACT	16980
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CCAACCTGAT TCCATCTAAA ATACGACCGT CTGCTGCTAG TGGGTGACTC CGTCTGGTTT	17160
CCTTGTAACG AGCGACCAAT TCCTTATCAG CCGCATCCAA AAAGAGGATT TTGAAATCCA	17220
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AAAACCTTAGG CAAGAGAGCT GCGGCATAT TATCAATGGT GAAATAACCT AGATCCTCGA	17400
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TCAGCATGTG GTGTATTAAG TTCCATAGTC ACCTCTAGGC TGTTCCTAGG ATCGGTTTAT	18540
CCGTTCCATC TACAGTTTCT TTAGTGATGC GAACCAATTT CACATTTTCC TGACTCGGCA	18600
CCTCAAACAT GACATCTAGC ATGGTTTCTT CGATGATGGA GCGAAGTCCA CGCGCCCTG	18660
TCTTCCGTTT GATTGCTTTA TTAGCAATCT CTGGAAGGC TTCGTCGTCA AATTCCAAC	18720

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CAACATCATC ATAAGAAAGC AAGGTTTGGT ATTGTTTCAC CAAGGCATTT CTTGGCTCTT	18780
TCAAGATGCG AACCAAGTCA TCAACGGTCA ATTGCTCAAG AGCCGCAAAA ACAGGCAAGC	18840
GTCCAATCAA CTCAGGGATA ATACCAAATT TTTGAATGTC TTCAGCGATG ATTTCTTGCA	18900
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CCAGACGTTG TTTGACAATT TCTTCAATAC CATCAAAAGC ACCACCCACG ATGAAGAGGA	19020
TATTTTTTGT ATCCACTTGA ATCATCTCTT GTTGTGGATG TTTGCGTCCA CCTTGAGGCG	19080
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GGAGGATATT TTCCACATCC TCACCCACAT AACCAGCCTC CGTCAGAGCT GTCGCATCCG	19320
CAATAGCAAA AGGTACATTC AAGCTCTTAG CCAAGGTCTG GGCAAGGAAA GTTTTCCCTG	19380
AACCAGTTGG GCCAATCATC AAAATGTTTG ACTTCTGCAA ATCCACATCT TCTGACTCTT	19440
CGCGTGTATC GTGGAAATG ATGCGTTTGT AGTGGTTATA AACCGCCACT GCCAAGGCAC	19500
GCTTGGCACG ATCTTGACCA ATTACATAGT GGTTCAGAT ATGGAGGAGT TCAATTGGTT	19560
TTGGCACCTC AGACAAGTCT GCCAAGACTT CCTCAACCAA TTCTTCTCGA ATGATTTCTT	19620
GAGCTAACTC CACGCATTCA TTACAAATAA AAGCATTGTT GCCAGCAATT ATTTTGTGTA	19680
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GCATGAATAC TATTGACCAG ATTGGTAAAG GCATTTAACC AAAGGAGGAT AGAAAGCCCG	19860
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GAAGCAAGCG ACGCCCCATC CCATCAAAGG TCACACGCCC CATCAAGATA GCATGATTCA	20340
GAGTTGTTTC TTTAAAGTGC TGCAATTCTG CTGGCAAATG CCAAGGCAGA CGATTTTCCT	20400
TACCAATCAC ACCCTCTTCA TCCTGGGCCC AAATAGCTAC GATTTTCTTA GTCATGCTTC	20460

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CATCCTTTTC ACTGATAGTA CTATTTTATC AAAAACTCA AAAAAAGACT GGTTTGGAAT	20520
AGCTTACAAA ATAGAAAAA TCTGTAAGAA ATTCCTACA GATTTATCTA TGTTCCTTA	20580
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CATCCAAACC TTTTGGAAA AGTTCTGACA AGTAACGGTA GATAACAAGA ACACGTCCA	20760
AGCTTTCTTC AACATTACGG TATTCACCAG CTCTTCTTC GATTTCACTA TTTTGAAGGA	20820
ACTCTGTCAA TGTAAGAAAT GGGCTTCCAC CGAGTGTAAT CAAGCGTTCA CTGATTTTCT	20880
CCAATTGACC GTCAAGAGCT TCCATGTACT CATCCATTTT TGGATGCCAT ACAAGGAAAC	20940
CACGACCATG CATATACCAG TGCACTTGGT GCAAAGCAAC GTGAGCTACA TACAAATCAG	21000
CAACAGCTTG GTTCAAGACT TCCTTTGTTT TTGCCAATGC	21040

(2) INFORMATION FOR SEQ ID NO: 56:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2387 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 56:

ATTCTTAATA CGATTAAAAG GCTTATTACT AAAAGAAAAT TTCAGTTAGA TGAACATAAC	60
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GATAACTTAT TTGATATTAT AGATGGTGAT AGGGGCAAAA ATTATCCTAA ATCAGATGAG	180
TTGTTTAGTG AGGAGTACTG TTTATTTTAA AATACAAAGA ATGTTACTAA AAACGGATTT	240
TCATTGATA CAAAGCAATT TATCACTAAA ACAAGGATA AATTACTTCG AAAAGGCAAA	300
CTTGAGCGTT ATGATATAGT CTGACAACA AGAGGTACTG TTGGAAATGT AGCGTACTAC	360
GATGAATTAA TAAATATATA ACATTTACGT ATAAATTCAG GTATGGTAAT ATTACGTCCC	420
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AAATCACAAT TGGCAATCCA AAAATCTCTG GAAGAACTTG AAACCTTGAA GAAATCTCTG	660
ATGCAGGAGT ATTTTGGCTG ATATTCTGCC ATTGTAATTA CGGTAATGAT TTGTTATAAT	720
ACTTCAAAGG AGGAAATCAG ATGGTAGTAA AAACAAGAAA ACAAGGAAAT TCAATCACCA	780
TTACGATTCC AAGTGAATTT AATATTCCAA GTGGTGTTAA ATACGAAGCG AAATTGTTAC	840

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CAAGTGGTGA GATTATCTTT ACTCCTGAAG AATTGGGGCA GCAGGTTTCT TATGTATCTG	900
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CTTTGGTGGA AAAATGACAA TCTATTTGAC AGAAAAGCAA ATTGAAAAAA TAAATGCTTT	1020
AGCAATTCAA CGGTATTCTC CAAATGAGAA AATTCAAACA GTTAGTCCTT CTGCCTTAAA	1080
TATGATTGTG AACTTACCAG AACAATTTGT CTTTGGGAAG CCTCTTTATC CAACAATTTT	1140
TGATAAAGCA ACGATACTAT TTGTCCAATT GATAAAGAAG CATGTTTTTG CTAATGCTAA	1200
TAAAAGAAGT GCTTTCTTCG TTTTGGTCAA ATTTTACAA TTAACGGCT ATCGTTTTTC	1260
TGTAACGGTA GAAGAAGCAG TAAAAATGTG TGTAACCATC GCAGTAGAAG CTTTAACTGA	1320
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AGAATCTGT AATGCAGAAA CTGATATTGT CTCTTTTAT TGATGAATAA GAAAGTGAGA	1500
AATTATGGAA TCAAAAGTTA CAATTATCAT GCAAGAAATG TTACCTCTTT TAAATAATGA	1560
ACAACTACTA GCGTTGAGAG AGAGTTTAGA ACATCATCTA GTAGACGGAA AAAAGCAGCA	1620
GAAGTATTCG AATAATAACC TGTGCAACT ATTTATTACC GCCAAGCAGG TAGAGGGCTG	1680
TAGCTCAAAA ACAATTCGTT ATTATCAGAG GACGATTGAA AACTTGTTTA ATGCTATTAA	1740
AGAGTCTGTG ACACAACTCA CAACAGATGA TTTAAGGAGT TATTTAGCAA ATTACCAGTC	1800
TGAAAAGGAT TGTAGTAAGG CAAATTTAGA CAATATTAGG CGTATATTGT CTTCTTTTTT	1860
TGCTTGGCTT GAGCAAGAGG ATATATCATT AAAATTCCCA TTCGACGGAT ACAGAAAATT	1920
AAGACTGAGC AAAATGTGAA GGAAACTTAT ACTGATGAAC ATTTGGAAAT TATGCGTGAT	1980
AACTGTGAAA ATTTGAGAGA TTTGGCAATA ATAGACCTAC TAGCATCGAC AGGTATGCGT	2040
GTAGGGGAGC TTGTACAGTT GAATCGTTCA GATATTGATT TTGAAAACAG AGAGTGTGTT	2100
GTCTTTGGTA AAGGAAAGAA GGAGAGACCA GTATATTTTG ACGCTCGTAC GAAAATTCAT	2160
TTAAGAAATT ATCTTAACGA CAGAAAAGAT AGTCACCCTG CTCTTTTTGT AACGCTAGTT	2220
GGAAAAGTCC AGAGGCTTGG AATTGCTGGT GTAGAGATTC GCTTAAGAAA GTTAGGAGAC	2280
AAACTCGGCA TACAAAAGGT TCACCCACAT AAGTTCAGAA GAACTTTAGC GACTAAGGCA	2340
ATTGATAAAG GTATGCCTAT CGAACAAAGTC CAAAACTGC TAGGTCA	2387

(2) INFORMATION FOR SEQ ID NO: 57:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 10669 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double

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(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 57:

ATATTAAAGC GACTTCTGT GCGCTAGGGA AAAATGTTCC TGGGAATGAG GACTTGGTGA	60
AGAGGATAAA ATCTGAAGGT CATGTTGTTG GAAACCATAG CTGGAGCCAT CCGATTCTCT	120
CGCAACTCTC TCTTGATGAA GCTAAAAAGC AGATTACTGA TACTGAGGAT GTGCTAACTA	180
AAGTGCTGGG TTCTAGTTCT AAACATCATGC GTCCACCTTA TGGTGCTATT ACAGATGATA	240
TTCGCAATAG CTTGGATTTG AGCTTTATCA TGTGGGATGT GGATAGTCTG GACTGGAAGA	300
GTAAAAATGA AGCATCTATT TTGACAGAAA TTCAGTATCA AGTAGCTAAT GGCTCTATCG	360
TTTGTATGCA TGATATTCAC AGTCCGACAG TCAATGCCTT GCCAAGGGTC ATTGAGTATT	420
TGAAAAATCA AGGTTATACC TTTGTGACCA TACCAGAGAT GCTCAATACT CGCCTAAAAG	480
CTCATGAGCT GTACTATAGT CGTGATGAAT AAGCAAGAAA AAATAGGTCT GTTAGATATT	540
TGACAGACTT ATTTTTTACA GAATATAGTA CTACTTAAAA AATGTTTAT GCTATAATTG	600
ATGAATAAAA TAGAAGGAGA AGCATATGAA TACCTATCAA TTAAATAATG GAGTAGAAAT	660
TCCAGTATTG GGATTTGAA CTTTAAAGGC TAAGGATGGA GAAGAAGCCT ATCGTGCAGT	720
GTTAGAAGCC TTGAAGGCTG GTTATCGTCA TATTGATACG GCGGCGATTT ATCAGAATGA	780
AGAAAGTGT TGTCAAGCAA TCAAAGATAG CGGAGTTCCA CGTGAAGAAA TGTTCTGAAC	840
TACCAAGCTT TGGAAATAGT AGCAAACCTA TGAGCAAACT CGTCAAGCTT TGAAAAATC	900
TATAGAAAA CTGGGCTTGG ATTATTTGGA TTTGTATTTG ATTCATTGGC CGAACCCAAA	960
ACCGCTCAGA GAAAATGACG CATGGAAAAC TCGCAATGCG GAAGTTTGGA GAGCGATGGA	1020
AGACCTCTAT CAAGAAGGGA AAATCCGTGC TATCGGCGTT AGCAATTTTC TTCCCCATCA	1080
TTTGGATGCC TTGCTTGAAA CTGCAACTAT CGTTCCTGCG GTCAATCAAG TTCGCTTGGC	1140
GCCAGGTGTG TATCAAGATC AAGTCGTAGC TTAGTGTCTG GAAAAGGGAA TTTATTGGA	1200
AGCTTGGGGG CCTTTTGAC AAGGAGAACT GTTTGATAGC AAGCAAGTCC AAGAAATAGC	1260
AGCAAATCAC GGAAATCGG TTGCTCAGAT AGCCTTGGCC TGGAGCTTGG CAGAAGGATT	1320
TTTACCACTT CAAAATCTG TCACAACCTC TCGTATTCAA GCTAATCTTG ATTGCTTTGG	1380
AATTGAACTG AGTCATGAGG AGAGAGAAAC CTTAAAAACG ATTGCTGTTC AATCGGGTGC	1440
TCCACGAGTT GATGATGTGG ATTTCTAGAA AATCATAAAA AGAATTGTAC ATTATTCTAA	1500
TTTTTGATAT AATAGTCAGC AGGAAAGAAA GTCTTATGGC GTTCTTCAAG CGAGCTTGGG	1560
ATAGTGGGAG CCAAGTAGGG CAAAATAAAG GGCTGGCGCT TTCTGTAGTA TTTTCAAAAA	1620

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CAATGAAGTA ATAAATTAGG GTGGAACCGC GTTCTGACG CCCCTAGGTT AAATCAACCT	1680
AGGATTGTCA GATGTGGTTC TTTTGCTTAT TCAGTCTATT GTGTGAAAGA AAGGAGAGCC	1740
GTGGACAACC TTTATCTTGT AAAAGACGAT AGTCAACTAG CTACATTTTCG TGATTTTGTA	1800
GTAAGAAATA CTGAAAAGTT GAAAGATTAT CAATCTTTTT TAAAGAATGA ACTTGCAGTC	1860
TGTGATTTAC CGCAAGCTGT TATTTGGTCA GATTTTAATG CTGCTACACA GATTATTAGG	1920
GAAAGTGCTG TTCCAACCTA TACAAATAAT AGACGAGTGG TTATGACGCC TGATTTAGCT	1980
GTTTGGAAG AATTGTATTT GTATCAGTTG ATGGACTACG AGTGTTCTGA GCAAACCTCA	2040
GCAATAGAAA GTCATATCA TTCTTTATCT GAAAAATTC TCTTACAGAT TGTAGGACAT	2100
GAGTTAGCTC ATTGGTCGGA CATTTTTTAG ATGATTTTGA TGGTTATGAC TCTTATATCT	2160
GGTTCGAAGA GGGGATGGTT GAATATATTA GTCGCAAGTA TTTCTTGACA GAAGAGGAAT	2220
TTCAAGCGGA AAAAATTTGT AATCAATCTC TCGTAGAACT TTTTCAGAAG AAGTATAGTT	2280
GGCATTCAAT GAATGATTTT GGTTCCTCGA CTTATGATAA GAACTATGCA AGTATTTTTT	2340
ATGAATACTG GCGCAGCTTT TTGACAGTAG ATAAGTTGGT AGAAAAATTA GGTAGTGATC	2400
AAGCGGTCTT AGATTCTTAT CATTTATGGG CAAATACAGA AAAAATTTT CCCTTGTTAG	2460
ATTGGTTTGT TCAGCAGAAA TTAATTGAAA AAGAAATATA AAACTAAAG GAGTAAACAA	2520
TGTCTAAGAA ATTAACATTT CACTGCATCA GTGGCAGAGA CCTCCTTACA GTCGGGCTGC	2580
TCCACGCTCA GCACTAGAGT GCCTGAGCTA GACGCAGTAC TAACTCGTCT TGCCCTCGTAT	2640
GATCGACGAG GCAGACTCGT GTCGCAAGTA ATTATTTTTT ATTAAGGAGT ATTCAATGTC	2700
TAAGAAATTA ACATTTCACT GCGTCAGTGG CAGAAACCTC CTTACAGTCG GACTGCCCTA	2760
CGCTCAGCAC TAGAGTGCCT GAGCTAGACG CAGTACTAAC TCGTCTTGCC TCGTATAATC	2820
GACGAGGCAG ACTCGTGTCG CAAGAAATTA TTTTATTATTA AGGAGTATTC AATGTCTAAG	2880
AAATTAACAT TTCAAGAAAT TATTTTGACT TTGCAACAAT TTTGGAATGA CCAAGATTGT	2940
ATGCTTATGC AGGCTTATGA TAATGAAAAA GGTGCGGGGA CAATGAGTCC TTACACTTTC	3000
CTTCGTGCTA TCGGACCTGA GCCATGGAAT GCAGCTTATG TAGAGCCATC ACGTCGTCTT	3060
GCTGACGGTC GTTATGGGGA AAACCTAAC CGTCTCTACC AACACCACCA ATTCCAGGTG	3120
GTCATGAAGC CTTCTCCATC AAATATCCAA GAACTTTACC TTGAGTCTTT GGAAAAATTG	3180
GGAATCAATC CTTTGGAGCA CGATATTCGT TTTGTTGAGG ACAACTGGGA AAACCCATCA	3240
ACTGGTTCAG CTGGTCTTGG TTGGGAAGTT TGGCTTGACG GAATGGAAAT CACTCAGTTC	3300
ACTTATTTCC AACAAAGTCG TGGATTGGCA ACTGGCCCTG TGAAGCGGA AGTTACCTAT	3360

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GGTTTGGAGC GCTTGGCTTC TTACATTCAA GAAGTAGACT CTGTCTATGA TATCGAGTGG	3420
GCTGATGGTG TAAAATACGG AGAAATCTTT ATCCAGCCTG AGTATGAGCA CTCAAAATAT	3480
TCATTTGAAA TTTCGGACCA AGAAATGTTG CTTGAAAAC TTTGATAAGTT TGAAAAAGAA	3540
GCTGGTCGTG CATTAGAAGA AGGCTTGGTA CACCCTGCCT ATGACTATGT TCTCAAATGT	3600
TCACATACCT TTAATCTGCT TGACGCGCGT GGTGCCGTAT CTGTAACAGA GCGTGCAGGC	3660
TATATCGCTC GTATCCGTAA CTTGGCCCGT GTCGTAGCCA AAACCTTTGT CGCAGAACGC	3720
AAACGCCTAG GCTACCCACT TTTGGATGAA GAAACAAGAG CTAAACTCCT AGCAGAAGAC	3780
GCAGAATAAA GAGAGTGACA AATTACGAAA ATGGGCGAAC AGAGTGAGCC CTGAGCCAGT	3840
TGCCGCAGTG ATGAAGGTAT CCTTAGTGAA ACTAAGGATA CTAGGCAAAA TTGGAGACTT	3900
TTGGCTCCAA TTTTAGCAAT GAAACAACGA AGTTGGTTGC TTGCGTGCCA ATCACATAAG	3960
GCAAACCTGA AAATAAAAAG ATACTTTTCG GAGAAAAAAC ATGACAAAAA ACTTATTAGT	4020
AGAACTCGGT CTTGAAGAAT TACCAGCCTA TGTGTGTACG CCAAGTGAAA AACAACTAGG	4080
CGAAAAATG GCAGCCTTC TCAAGGAAA ACGCCTGTCT TTTGAAGCCA TTCAAACCTT	4140
CTCAACACCA CGTCGTTGG CTGTTCGTGT AACTGGTCTT GCAGACAAAC AGTCTGATTT	4200
AACAGAAGAT TTCAAGGGTC CAGCAAAGAA AATTGCCTTA GATAGTGATG GAAACTTCAC	4260
CAAAGCAGCT CAAGGATTTG TCCGTGGGAA AGGTTTGA CTGTAAGATA TCGAATTCCG	4320
TGAAATCAAG GGTGAAGAAT ATGTCTATGT CACTAAGGAA GAAATTGGTC AAGCAGTTGA	4380
AGCCATTGTT CCAGGCATTG TGGATGTCTT GAAGTCACTG ACTTTCCTG TCAGCATGCA	4440
CTGGGCGGGA AATAGCTTTG AATACATCCG CCCTGTTCAC ACTTTAACTG TTCTCTTGGA	4500
TGAGCAAGAG TTTGACTTGG ATTTCCCTGA TATCAAGGGA AGTCGTGTGA GTCGTGGCCA	4560
TCGTTTTTTG GGACAAGAAA CCAAGATTCA GTCAGCATTG AGCTATGAAG AAGACCTTCG	4620
TAAGCAGTTT GTAATCGCAG ATCCATGTGA ACGTGAGCAA ATGATTGTTG ACCAAATCAA	4680
GGAAATTGAG GCAAAACATG GTGTACGTAT CGAAATTGAT GCGGATTTGC TGAATGAAGT	4740
CTTGAATTTG GTTGAATACC CAACTGCCTT CATGGGAAGT TTTGATGCTA AATACCTTGA	4800
AGTTCAGAA GAAGTCTTGG TGACTTCTAT GAAGGAACAC CAGCGTTACT TTGTTGTTCTG	4860
TGATCAAGAT GGAAACTCT TGCCAACTT CATTTCTGTT CGTAACGGAA ACGCAGAGCG	4920
TTTGAAAAAT GTCATCAAAG GAAATGAAAA AGTCTTGGTA GCCCCTTGG AAGACGGAGA	4980
ATTCTTCTGG CGTGAAGACC AAAAATTGGT GATTTTCAGAT CTTGTTGAAA AATTAAACAA	5040
TGTCACCTTC CATGAGAAGA TTGGTTCTCT TCGTGAACAC ATGATTGCTA CGGGTCAAAT	5100
CACTGTACTT TTGGCAGAAA AAGCTAGTTT GTCAGTGGAT GAAACAGTTG ACCTTGCTCG	5160

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TGCAGCAGCC ATTTACAAGT TTGACTTGTT GACAGSTATG GTTGGTGAAT TTGACGAAC	5220
CCAAGGAATT ATGGGTGAAA AATACACCCT TCTTGCTGGT GAAACTCCAG CGGTGGCAGC	5280
TGCTATTTCGT GAACACTACA TGCCTACATC AGCTGAAGGA GAACTTCCAG AGAGCAAGGT	5340
CGGCGCAGTT CTAGCCATTG CAGACAAATT GGATACGATT TTGAGTTTCT TCTCAGTAGG	5400
ATTGATTCCA TCAGGTTCTA ATGACCCTTA TGCCCTTCGT CGTGCAACTC AAGGTGTGGT	5460
TCGTATCTTG GATGCCTTTG GTTGGCACAT TGCTATGGAT GAGCTGATTG ATAGCCTTTA	5520
TGCATTGAAA TTTGACAGTT TGACTTATGA AAATAAGCA GAGGTTATGG ACTTTATCAA	5580
GGCTCGTGTT GATAAGATGA TGGGCTCTAC TCCAAAAGAT ATCAAGGAAG CAGTTCTTGC	5640
AGGTTCAAAC TTTGTTGTGG CAGATATGTT GGAAGCAGCA AGTGCTCTCG TAGAAGTAAG	5700
CAAGGAAGAA GATTTTAAAC CATCTGTGA ATCACTTTCT CGTGCCTTTA ACCTGGCCGA	5760
GAAGGCAGAA GGGGTTGCTA CGGTTGATTC AGCACTATTT GAGAATGACC AAGAAAAGC	5820
TTTGGCAGAA GCAGTAGAAA CACTCATTTT ATCAGGACCT GCAAGTCAGC AATTGAAACA	5880
ACTTTTTCG CTTAGCCCAG TCATTGATGC TTTCTTTGAA AATACTATGG TAATGGCTGA	5940
AGATCAGGCT GTCCGTCAAA ATCGTTTGGC AATCTTGTC CAACTAACCA AGAAAGCAGC	6000
TAAGTTTGCT TGTTTTAAAC AAATTAACAC TAAATAAAAT TTGATAAACG GACTTTATCT	6060
TATTACAAAG GAGAAGAAAT GGATCCGAAA AAAATTGCTC GTATCAATGA GCTTGCTAAA	6120
AAGAAAAAA CAGAAGGCTT AACACCAGAA GAAAAAGTGG AACAAGCCAA ACTACGTGAG	6180
GAGTACATCG AAGGTTATCG CCGCGCTGTT CGTCACCACA TTGAAGGAAT CAAAATTGTG	6240
GACGAAGAAG GAAACGATGT TACACCAGAA AACTACGCC AAGTACAACG TGAAAAAGGA	6300
TTACATGGCC GTAGTCTTGA TGATCCAAAT TCATAATAAT ACTCTTCGAA AATCAAATTC	6360
AAACCACGTC AGCTTCACCT TGCCGTACTT AAGTACAGCC TCGGCGTAGC TTCCTAGTTT	6420
GCTCTTTGAT TTTCAATTGAG TATATGTATT CTTTCTTTTA ACAAAGATAG ATGAAACGAT	6480
AACAAAGAGA CTAGCAGTTT GTGTTTGCTA GTCTTTTTC GCTAAAAAG GAACCATAAT	6540
GGTTCCTAAA AACTATCATT AGTAACTTGC ACCGGCTGTA GCGTCTGCGT CACCACCGTG	6600
GCCTCCAGCA TCCCCTGAAT CAGAAGCGCC AGAAGTAGCA TCGGCGTCTC CATGACCTCC	6660
GGCAGCAGGA GCAAAATGGTC CGCTACCACC CACCAAACGT TGACCAGTCT CTTTATAGTA	6720
CCAGTCAAGC CATGGTTGGA AGTTAAAGAC GATTTCATTG ATACCAGCGT ATGATCCATC	6780
AGGATAGTAC ATTGCTTGGT AGTTGTGAGT GTTGATAACA CCTGCAGGAG AACCTGGAAC	6840
GATCGTACGG ACGTATTCTT GGTTTCCGTT GCGAAGTGTT CCGATAACCC ACTCTACGTT	6900

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CTTCATACGT GCTGGTGGAA GAGAACCATG AACAGTCGAC ATACGGCTAC CTGATTGAGG	6960
TGGTACACGT TTAGCGAACA TAGTGTCTGG ATCTTGGTGA GCGTTGTTGT AGTAGAGGAA	7020
TTGGTTGTTG TCGTCAGCGT ATGTCAATTC AAATGGCATA GCTTTCAAGA ACATATCAAT	7080
TTGGTTAACT GTTAGGATAC CGTGGTCCAA TTTGACATAG GTATCACCAG AAACAGCACC	7140
AGTGAATGCT GCAACTTTTT CTACCCATTC TGGATCGTCA GGGTCAACTT CTGTGATGGT	7200
TGTAGCGATT GGTTTTCCAC AATCCAAGTC TTCTGATTCTG ATTGGTTTTG GTTTTTTCAA	7260
TTTCGAAACG ACTCCTACGT ATTTAACAAA GTTATCTAAG CAAGTTTCAA GGAATTTAAC	7320
AGTGCCTTCG TTGGTGATAT TTCCGTGTGT ATCAAAAGCT TCCTTAGCTT TACCAAGAAG	7380
GAATTCGTTA CCTGGAAGCG TGTAGGCATT AACACCTGGA GCATCAAGGA TTTTACGAAG	7440
GTGAACCTGA GCACGTGATG TTCCTTGGTC ATAGTATGAT GCACCCACAA TCATAACAGG	7500
CTTGTTTTCA AATGGATGAA CTTCGTATGA AAGCCATTCA AGTACAGATT TGAGTGAAGC	7560
TGAGATAGTG TGGTTATGCT CAGGAGTAGC AATGATAACA CCATCTGCAC GAGTAATTTT	7620
GTTATATAAA TAACGTAATT GGAAACTTTC ATCCCATTTT TCATCTTGGT TAAACATTGG	7680
AACTTCGTC ATTTCAAGAA CTTCTAATTC AAATTGAGT TTGAAGTAGC GACGGATAAA	7740
TTCCAAGAGC TTACGGTTAT ATGATTGATC GTAGTTTGAT CCAACAAGTC CAACAAATTT	7800
CATTCTTTTT GGTCTCCTAT CTTACAAATT TTCCAGTCA AAGTCTTCAG CATCTTTGCG	7860
AAGTAATCT TGTGCATTAC GTAATTTTTT TGTGATTTTT ACAAAGATAC GGAAGTCATC	7920
AAAGATGGCA TCCAATTTCT TGATAACATC AAGGTCAACC AAGTCGCCAC TTGGGTAAA	7980
TGCTTGAAGA GAGTGTGAGA GCAAGAATTC ATCTGGAAGA ACATTTGCCT TGATTTCAGG	8040
AGCATTCAAG ATTTGACGAA GTTGCAATTG GGCACGAGAT GAACCAAGCG TACCGTAAGA	8100
AGCACCTGTA ATCATGATTG GTTTGTTCAA AAGTGGGTAA ATACCATAAG ACAACCAAGC	8160
AAGAGCGCTC ATCAAAACAG CTGGAATAGA GTGATCATAC TCAGGAGTAC CGATAATAAC	8220
GCCATCTGCC TCTTCGATTT TAGCAGCAAT TTCCAATATT TCAGCAGGTA CTTGCTTGTC	8280
AGCTGGTTTG TTGAAGACAG GAATGGCCTT GATTTCAACA AGTTCAATTT CAGCTTTGTC	8340
AGTAAAGTGT TTTTGCATGT ATTGAAGCAA TTGACGGTTT GTAGAACGTT TTGAATTTGT	8400
TCCAACAATA GCAATAAGTT TTAACATGAG ATTTCTTTC TCTTTTACA TAATACAATT	8460
TTAAATTC ATTGAAACAG TTGTCTCTAT AGAGTAGGAA TTCCTGAAGA ACAGCTTAGG	8520
TGGCCTTCTT TATCGATGAG GATGACTTCG ATGCCCTCCA AACTTTCGAC TTGCCAGAGG	8580
ATAGAAGCAG GTCTTTCTCC AAAGAGTCGA GTCGTCCAGA TTTCCGCCATC GACTGATTTA	8640
TCAGAGATGA TTGTTAGACT CGCTAGTTCC GTTTCACAG GATATCCTGT TTGACTGTCA	8700

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AAAATGTGAT GGTAACTCTG TCCATCGACG GTCAGGTGAC GTTCATAAAT GCCTGAAGTC	8760
ACGACAGATT TATTGACAAC AGGGATGGTC ATTAAATGAT TTCCCTAGG ATTGGCTGGG	8820
TCTTGAATCC CGATTTGCCA TGGGTTATCC CCTCTGCTT GATTTTTCCT AATGGTCAGG	8880
ATATTCCCTC CCAGATTGAT CAAGGCAGAA GTCACCCCTT CTTTCCTAAG AAATTGGGCA	8940
ACCTTATCCG CACTGTATCC TTTGGCTAAA CAACCTAGAT CGATCTTCAT TCCTTTCTGT	9000
TTTAAAAACA CAGTAGAAGT AGAAGAATCT AACTCGATAC CATGAGGATT GATTAGAGGC	9060
AGCACCGATT CAATTTCTTG AGGCTGGGCG ACCTTGGCAT CTGAAAAACC GATACGCCAG	9120
GTTTGAATTA AGGGACCAAT GCTGATATTG AGGTGGCTAG AGAGCGCTAG GCTATGCTCT	9180
AACCCAAGTG AAATCAGCTC AAACAGGTCT GGATGAACCG TGACGGGGGC TATTCCTGCT	9240
TGATAATTGA TTTCCATCAA CTCAGATTCT TGAATATTGG CGTTGAAGCG GTATTCAAGT	9300
TCTTTGAGCA AGTCAAAGGA TTTTGGAGA AAGATATCGG CTTGCTCATC CACTAATGAA	9360
ATAGTGATAG TAGTCCCAT TAGCCGTTCA GAATGTGAAC GAAGAGTCAA GCTACCAACT	9420
CCTTCTCTT ATAGAAAATA AGTTGTAATA TCAATAATC ATCTAAATTG AAGCCCTTAC	9480
ATTTTCATTT CATGTTATTA TAATACCATA AAGTTAGAAT TTTCACAAAC AAAATTGGA	9540
AAAAGTCAAG AAATATGCTC ATAAAATTCA TCAGGCTTGA AAACAGGATA AATGGGGAAT	9600
TATTTTGTAT AAAAAATGCT GAAATAATAG TACCCCTT GTAAACGCTA ACGGTAAATG	9660
GTATACTAGT AAGGTAAATT TAGAATGAAG GCAGGAAATT TTTATGAGTA AAATCGTTGT	9720
AGTCGGTGCT AACCACGCTG GTACAGCATG TATCAATACC ATGTTGGATA ATTTTGAAA	9780
TGAGAACGAA ATTGTTGTAT TTGACCAAAA CTCTAACATC TCTTTCCTAG GATGTGGAAT	9840
GGCTCTTTGG ATTGGTGAAC AAATTGACGG TGCTGAAGGC TTGTTCTATT CTGATAAAGA	9900
AAAATTGGAA GCTAAAGGTG CTAAAGTTTA CATGAACTCA CCTGTTCTTT CAATCGACTA	9960
TGATAACAAA GTAGTTACAG CGGAAGTTGA AGGAAAAGAG CACAAAGAAT CATACGAAPA	10020
ATTGATTTTC GCTACAGGCT CTACACCAAT CTTGCCACCA ATCGAAGGTG TTGAAATTGT	10080
TAAAGGAAAC CGCGAATTTA AAGCAACTCT TGAAAACGTA CAATTCGTGA AATTGTACCA	10140
AAATGCTGAA GAAGTTATCA ATAACTTTTC TGACAAGAGC CAACACCTCG ACCGTATCGC	10200
CGTTGTTGGT GGTGGTTACA TCGGTGTTGA ACTTGCTGAA GCCTTTGAAC GTCTTGAAA	10260
AGAAGTTGTC CTTGTTGATA TCGTTGATAC TGTCTTGAAC GGTACTATG ACAAAGACTT	10320
CACACAAATG ATGGCGAAGA ACTTGGAAGA TCACAACATC CGCTTGGCTC TAGGTCAAAC	10380
TGTTAAAGCA ATCGAAGGTG ACGGTAAAGT TGAACGCTTG ATTACTGACA AAGAAAGCTT	10440

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TGACGTGGAT ATGGTTATCC TTGCAGTTGG TTTCCGTCCA AACACAGCCC TTGCAGGTGG	10500
TAAGATCGAA CTCTTCCGCA ACGGTGCCTT CCTTGTAAGC AAGAAACAAG AAACATCTAT	10560
CCCAGACGTT TACGCTGTTG GTGACTGTGC GACTGTTTAT GACAATGCTC GTAAAGATAC	10620
AAGCTATATC GCTCTTGCTT CAAATGCTGT GCGCACTGGT AACGTTGGT	10669

(2) INFORMATION FOR SEQ ID NO: 58:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 7542 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 58:

CGCGCTAATA GATACTTTAT GATAGAATAA AGAACAAGAT TGACAAGTAA GAGGAAACAT	60
TATGCAAAAT CAAACACTCA TGCAATACTT TGAATGGTAT CTGCCCCACG ACGGTCAACA	120
CTGGACGCGT CTGGCTGAAA ATGCTCCACA CCTAGCTCAT CTGGGGATCA GTCACGCTGT	180
GATGCCACCA GCCTTCAAGG CAACCAACGA AAAAGATGTC GGCTATGGGG TCTATGACTT	240
ATTTGACTTA GGAGAGTTCA ACCAAAAAGG GACTGTCCGC ACCAAGTATG GTTTCAAAGA	300
AGACTATCTT CAAGCCATTC AAGCCCTTAA AGCACAGGGA ATTCAACCTA TGGCCGATGT	360
AGTTCTCAAC CACAAGGCTG CTGCCGATCA CAGGAAGCC TTTCAGGTTA TCGAAGTTGA	420
TCCTGTAGAC CGTACAGTTG AACTTGAGGA ACCCTTCACC ATCAATGGCT GGAAGTATTT	480
TACCTTCGAT GGTGCGCAAG ATACCTATAA TGGCTTCCAC TGGCATTGGT ACCACTTCAC	540
CGGTACAGAC TACGATGCCA AACGCAGTAA ATCTGGGATT TATCTGATCC AAGGGGACAA	600
CAAGGGCTGG GCCAACGAGG AATTGGTCGA TAACGAAAAC GGAAACTACG ACTACCTCAT	660
GTATGCCGAC CTAGACTTTA AACATCCTGA AGTCATCCAA AACATCTATG ACTGGGCTGA	720
TTGGTTCATG GAAACGACTG GTGTAGCTGG TTTCCGTTTG GATGCCGTTA AGCATATTGA	780
CTCTTTCTTT ATGCGCAACT TCATCCGCGA TATGAAGGAA AAATACGGTG ACGATTTCTA	840
TGTTTTTGGT GAATTTTGGG ACCCAGACAA GGAAGCCAAT CTGGACTATC TCGAAAAAAC	900
GGAAGAACAC TTTGACCTTG TCGATGTTTG TCTCCACCAG AATCTCTTTG AAGCCAGTCA	960
AGCTGGCGCA AACTATGACC TTCGTGGCAT TTTCACAGAT AGCCTGGTTG AACTCAAGCC	1020
TGACAAGGCT GTGACTTTTG TCGACAACCA CGATACCCAA CGAGGACAAG CCCTTGAGTC	1080
TACCGTTGAA GAATGGTTCA AGCCAGCAGC CTATGCCCTC ATTTTGTTAC GCCAAGACGG	1140
CCTTCCATGT GTCTTTTACG GAGACTACTA TGGGATTTCG GGCAGTATG CTCAAGAAGA	1200

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TTTCAAAGAA ATCCTTGACC GCCTCCTAGC CATCCGAAAA GATTTCGCCT ATGGAGAACA	1260
AAATGACTAC TTTGACCATG CTAAGTGTAT CGGTTGGGTA CGTTCAGGTG CTGAAAATCA	1320
ATCCCCAATC GCAGTCCTTA TCTCAAATGA CCAAGAAAAC AGCAAGTCAA TGTTCGTCGG	1380
TCAAGAATGG ACTAATCAAA CCTTTGTAGA TTTACTTGGT AACCACCAAG GTCAAGTTAC	1440
AATTGATGAG GAAGGTTATG GACAATTTCC TGTCTCAGCT AGATCCGTAA GTGCTCGGGC	1500
AGTCAATACC ATCTAATAGC TCATAATAAC CAAGCTAGGT CCAAGCGGAT TTGGCTTTT	1560
TGTATTACACA AAAAGACCTA CCCAAATGGA TAGATCTTTA CTTGATTACA ATTTACCTGC	1620
TACTGCATCC AACAATTCTT GGATCTTAGG TTGGTTGCTT CCTCCTGCCA TGGCCATATC	1680
TGGTTTACCA CCACCACGTC CATCGATGAT TGGTGCTAAT TCTTTGACAA GGTTTCCTGC	1740
ATGAAGGTCT TTTGTCTTGC TTGCTACAAG GACATTGACT TTGTCACCGA TAGCGGCAAC	1800
TAGGACAAGA AGATCAGAGT AGTCTTTTGG TTTCCAGTTA TCTGCAAAAG TACGAAGGGC	1860
ACCGGCATCG GATACAGACA CTTGACTAGC AATGTAACGA TGACCGTTGA CTTCTTAAC	1920
ATCTTTGAAG ATATCGCCTG CGGCTGCAGC TGCAGCTTTT TCTTTCAACT CAGCATTTTC	1980
TTTTTGAAGT TGACGAAGTT GTTCTTGAAG TCCTTCTACC TTGTGAGGTA CTTCTTGAC	2040
TTGAGGTGCT TTCAAGGTTG CTGCGATAGC TTTAAGAGCA TCCTCTTGTT CACGATAGGC	2100
TTCAAAGGCT TCCTTACCAG TCACTGCCAA GATACGGCGA GTTCCTGAAC CGATTCCTTC	2160
TTCTTTGACA ATTTTGAAGA GACCAATCTC AGAAGTGTG TCAACATGAG TACCACCACA	2220
AAGTTCAATA GAGTAGTCAC CGATAGTCAC GACACGAACT TCCTTGCCGT ATTTCTCACC	2280
AAAGAGGGCC ATAGCTCCCA TTTCTTTAGC AGTGTCAATA TCCGTTTCAA CTGTCTTCAC	2340
TTCAAGTGCT TCCCAAATTT TCTCGTTAAC TTGCTGTCA ATCGCACGAA GTTCCTCAGC	2400
AGTTACTGCT TGGAAGTGGG TAAAGTCAAA GCGAAGGAAT TCAACTTCGT TAAGAGATCC	2460
TGCCTGTGTT GCGTGGTTTC CAAGGATATT GTGAAGGGCA GCGTGAAGCA AATGAGTCGC	2520
AGTGTGGTTT TTCATGACAC GGTGACGGCG ATTGCTATCA ATTGCCAAGG TATATTCTTG	2580
GTTCAGGCA AGCGGTGCAA GGACTTCAAC TGTATGAAGG GCTTGACCAT TTGGGGCTTT	2640
CTGAACATTG GTCACAGTAG CCACAACCTT ACCTGACTCA TCCAAGATTG GTCCGTAGTC	2700
AGCTACCTGT CCACCATTT CAGCATAAAA TGACGTTTCC GCAAAGATAA GAGAGGCAGT	2760
TCCTTCTGAA ACAGCTCCTA CTTCTGCATT GTCAGCAACG ATAGCTACCA ATTTAGAAGA	2820
CAATTGGCTA GCATTGTAGT TGAAGACACT TTCTACAGTG ATGTTTTGAA GAGTTTCATT	2880
TTGCATACCC ATTGAGCCAC CCTTGACAGC TGACGCACGC GCGCTTCTT GCTGTTCTTT	2940

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CATGGCTGCT TCAAAACCTT CACGGTCTAC AGTCATACCA GCTTCTTCAG CGATTCTTTC	3000
AGTCAATTCA ACTGGGAACC CATAAGTATC ATAGAGTTTG AAGACATCTG AACCAGCGAT	3060
AACAGATTGA CCTTTTCTT TCAAGTCTGC TACAATGCCT TGGGCAAAGT GTTGACCTGA	3120
GTGAAGGGTA CGGGCAAATG ATTCTTCTTC GCTCTTAACG ATTTTCTCAA TAAAGTCACG	3180
TTTCTCAAGC ACTTCTGGGT AGTAGCTTTC CATGATTTTT CCAACAGTTG GAACCAATTT	3240
GTAAAGGAAA GGCTCGTTGA TACCCAATTT TTGACCATGC ATAGAAGCAC GACGGAGAAG	3300
ACGACGAAGA ACATAACCAC GACCTTCATT TCCTGGAAGG GCACCATCAC CGATAGCAAA	3360
TGAAAGAGAA CGAATGTGGT CTGCGATAAC CTTGAAGCTC ATGTTGTCGC CATCTTGGTC	3420
ATAAACCTTA CCAGACAATT TCTCGACTTC ACGGATAATC GGCATGAAGA GGTCCGTTC	3480
AAAGTTGGTC TTAGCCCCCTT GGATAACGGC CACCAAACGC TCCAAACCAG CGCCCCGATC	3540
AATGTTCTTA TGTGGCAATT CCTTGATTTC GCTACGAGGA ACAGCAGGGT CTGCGTTAAA	3600
TTGTGACAAA ACGATGTTCC AGATTTCAT ATAACGGTCG TTTTCAATAT CTTCTGCAAG	3660
CAGGCGAAGA CCGATATTTT CTGGGTCAAA GGCTTCCCCA CGGTCAAAGA AGATTTCTGT	3720
ATCTGGTCCA GAAGTCCCG CACCGATTTC CCAGAAGTTG TCCTCAATTG GAATCAAGTG	3780
ACTTGATCC ACTCCACTT CAATCCAGCG GTTGTAAGAA TCTTTATCGT CTGGATAGTA	3840
GGTCATGTAA AGTTTTTCAG CAGGGAATC AAACCATTC AAGGCTGTC AAAGCTCATA	3900
AGCCCAAGTG ATAGCTTCGT CACGGAAGTA ATCCCCGATA GAGAAGTTCC CCAGCATTTTC	3960
AAACATGGTA TGGTGACGCG CGGTCTTCCC TACGTTTTCG ATGTCGTTGG TACGGATAGC	4020
CTTTTGGGCA TTGGTAATAC GTGGATTTTC AGGGATAATG GTCCCGTCAA AGTATTTCTT	4080
AAGGGTTGCT ACCCCAGAGT TGATCCACAA AAGAGTTGGG TCATTTACAG GAACCAAAT	4140
TACTGATGGT TCTACTGAGT GACCTTTGGT CGCCCAGAAA TCAAGCCACA TTTGGCGTAC	4200
TTGTGCACTA GATAGTTGTT TCATATTGTC TCCTTATTCA CTTGTTTAAT GTGATTGGCT	4260
TTCCAGCATT TCCACATAGT CAATCGCGAC ACAGAGGGAA ATGACTAGGT CTGCATAAGC	4320
GTCTTCAAGA ACCGTTACGG TATAGGTAGA AGTCAGATGG AAGAGTTCCT TCTTAATTTTC	4380
CGCAATCAAC TGATCGCGAT CATCCAGCAA TTTGAAATTC AAATCCCAGA TATTGCCCTC	4440
GATACGAAGA CCTAGATTAT CAAACTCATA CTTATCTCGC CAGAAGGTCA ACTTCTTACG	4500
AATGACAAAA CTCGAGCCAT CCCGAAGCTG AATTTCAAAA CGAGGAAGCA AGGTCAAGAT	4560
TTCTTTACTA ATCTCACTGA CTTGTTCAAC AGCCGCATCA TAGATGGTAA AGGTTTTAGG	4620
AATCTTAAAA AATGATCCCT CCACCTGATA GGCAATTTCT CCCCTGTCAT CCTTGATAGC	4680
GAAGCGTTCG CCTCCAAGAC GAACTTTTG TTTGACAAGA AATGTTTTCA TCAACACCTC	4740

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CAAAAATCAA AAGACAAGCT CATATCACGA AGGGCGAAAA ACCGCGGTAC CACCTTCATT	4800
CAATGAACCTT GTCATTCTCT TGTTCCTATG CAATTGTATG ATTGAGTAGC ATGACTTCCT	4860
AGCTTAGATG GCTCGCAGCA CCGCCATTTC TCTGGACTAA GACAAGTGAA AATCAATTCT	4920
CAACTTTCCTT ATTATAACGT TTTTAAAGC TTGCGTCAAC TGGAAATGAT CTCCGTTGAA	4980
TTAGACCAAT TCCCTACATC TCTGATTACT TTTTCAGGAT ATATTTTTC TTAAGTCCAT	5040
TTTTCTTTTT ATCCCAAATT TTCATATTAC TAAACACAGC TACTAGAATA TTTCCAAATA	5100
TAAAGGTGCC TATCACCAA TATATGGACT CAGTTGTTAG GTATTGTCGA TCCAAGCCAT	5160
CCTTTAAATG GAATAGTATA GCAGTTTGGT TAACAATCAT AAAGGTTGGC CAGAACTTT	5220
TTTTGAAAAA AGTAGACATT TTCATTATTT GTTGGCGCTT TCTGTAAGGT TAATACTCAA	5280
TAAAAATCAA AAAGCAAAT AGGAAGCTAG CCTCAAGCTG TACTTGAGTA CGGCAAGGCA	5340
ACGCTGACGT GGTTTGAAGA GTATAGGCTT AGTATACTAC TAGGCAAGCA AATAAACAAA	5400
TAAACAACCTA GAATAGAAAA AGATAGGGCT CTAAAACTG ACTTCTATTC CTTAAAAACG	5460
AACCAGCTTG ACTGATTCGT CTTCTTACGT TTATCTCCTA CTTCCGATAC ATTTTAACT	5520
GTAGGAAGAG GTCGCTATAT TTCCCTGTCC ATTTATGGTC AAATTTCTCA TAAACTTCTA	5580
GGTGTTCAT GGTTCACAA TCGGGATAGA AGGCCTTATC TTCCTTTGTT TCCTCTGGGA	5640
GCAATTCCTT CGCTGGTAGG TTTGGTGTG AATAGCCGAC ATACTCCGCA TTTTGAGAG	5700
CATTTTCAGG TTCAACATA AAGTTGATAA AGGCATAGGC TGAGTTTGG TTTTAACTG	5760
TTTTGGGAAT GACCATATTG TCAAACCAA GATTGCTGGC CTCTGTCGGT ACCACATAAC	5820
GTAGATTTTC ATTTTTTCT AACATTGGC TGGCTTCACC AGAGAAGGTC ACGCCGATTG	5880
CAACATTATT CTGAATCATA TAGCCCTTCA TCTCGTCCG AACGATAGCC TTGATATTG	5940
GAGTCAGTT GTAGAGCTTA TCCACTGTCT CTTCCAAGT CTGCAGATCC TTGGAGTTGA	6000
GGCTGTAGCC GAGGGAATTG AGTCCTAGTC CCAGCACCTC ACGCGCCCA TCAAAGAGCA	6060
TGATAGAATT CTTATACTCC GGCTTCCAAA GGTCAATCCA ATGCTCAGGC GCTTCATCTA	6120
CCATGGTTTC GTGTAGACA ATTCCTAAGG TTCCCAGAA GTAAGGGATG GAGAATTTAT	6180
TACCTGGGTC AAAGGACTGG TTGAGAACT CTGGTCCGAT ATTTTCGATT CTTCAATTT	6240
TTGAATAATC AAGCGGAACC AAGAGGTCTT CGTCCTTCAT CTTGTTAATC ATGTATTCAC	6300
TTGAATGGC AATATCGTAG GTCGTCCAC CCTGCTTTAT CTTAGTGTAC ATGGCTTCGT	6360
TGGAGTCAAA AGTCTCGTAC TGAACCTGAA TTCCTGTTTC TTCTGTAAAC TGAGTCAAGA	6420
GTTCAGGATC GATATAGTCT CCCAGTTAT AGATAACCAA TTTTGGACTA TCTCGACTAT	6480

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TGATTTTACT ATCTAAATGA GTCGCAATTC CCCACAAGAC AAGGATAATC GCTGCAATTC	6540
CTGCTAAAAA TGAATAGATT TTTTTCATGC TTGCTCCTCC TTCTCACGAG AGATAAAGTA	6600
ATAACCTACA ACTAGGATAA TACTAAAGAG AAAGACTAGA GCAGACAGGG CATTGATTTC	6660
TAAGGAAATC CCCTTGCGAG CACGAGAGTA AATCTCGACT GATAGGGTTG AAAAGCCATT	6720
TCCTGTTACA AAGAAGGTCA CGGCAAAGTC ATCTAACGAA TAGGTGAAGG CCATGAAATA	6780
ACCAGTAATG ATAGACGGAG TCAGGTAAGG AAGCATGATT TCCTTGAACA TCTGAAATTG	6840
ACTAGCTCCC AAGTCATAGG CCGCATGAAT CATGTCGCCA TTCATTTCTT TGAGTCGAGG	6900
CAAGACCATC AAGACCAGA TAGGAATGGA GAAGGCCACG TGAAGTAGATA GAACGGTCAA	6960
AAAGCCAAGT GAAAACCTGA GTTGGGTAAA GAGAATCAAG AAGCTAGCAC CAATCATAAC	7020
GTCAGGCGCA ACCATGAGGA TATTATTGAG TGATAGAAAG GCTTCTTGGT ATTTCTTACG	7080
AGACTGGTAG ATGTAAATGG CACCAAAAGT CCCGATAATG GTCGCTATCA AGGCTGATAG	7140
GAAGGCCAAG AAAAAATGTCT GAGCCAAAAT CAGCATGAGT CTCCCATCTC CAAACATGGT	7200
TTCAAAGTGA GTCCAGCTAA AACCTGTAAA GCTATTCTATA TCATCACCAG CATTAAAGGC	7260
ATAGCCAATC AAGTAAAGA TAGGCAGGTA GAGGACCAGA AAGACCAGTC CCAGATAAAG	7320
GTGGGCAAAT TTTTTCATCG TTCTCTCCTT TCCTTAGTCA CCCACATGGT GATGAACATG	7380
GTCAGGATGA GAATCACACC GATGGTTGAA CCCATACCAT AGTTGTCATT GGTTAGAAAA	7440
TTCTGCTCAA TAGCCGTCCC CAAGGTGATA ACGCGTCCC ACCAATCAAA CGGGTCAGCA	7500
TGAAGAGACT CAAACTTGGG ATAAAGACCG ACTGAACCCC GG	7542

(2) INFORMATION FOR SEQ ID NO: 59:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 9223 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 59:

AAAACCAAAT TCCGGTATTT TAACCTATGC TGTAATACC ATGAAGCTG TCATGACAGA	60
TCAGGTCTAT AACATTAAGG TTGAGACAGA AAATGGAAT TATGTTGGTG AAGCTAGCCA	120
TGTTTTGGTC CTTTGGACAA ATTACTTCGC TGATAAGAAA ATCTTTGAAG AAAACAAGGA	180
CGGCTATGCC AACATTTTGA TTCTGAAAGA TGCCTCTATA TTCTCCAAAT TATCCGTCAT	240
TCCTGATTTA TTAAAGGGG ATGTTGTCGC AAATGATAAT ATCGAGTATA TCAAAGCGCG	300
TAATATTAAA ATCTCTTCAG ATAGTGAATT GGAGTCAGAT GTTGACGGAG ATAAATCAGA	360

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TAACCTACCT GTAGAAATCA AAGTCCTAGC TCAGCGAGTA GAAGTATTTT CAAAACCGAA	420
AGAGGATTAG TATATAGAGA AAGCCTTTTT TAAGGCTTTT TGTATACTTT AAAAGATAGT	480
TCCTTTAACA ACGGACATTC CTTGCAAATA GTTTTACAAA AATAGTATAC TGGATTTCATT	540
GAGTTTGAAA ACGTTTGCCT AAAATTTGAA TGAATACTTT AGGAGACAAA TTGATGGAAT	600
TGAGTGCTAT TTACCATAGG CCTGAGTCGG AGTATGACTA TCTTTATAAG GATAAGAAAC	660
TCCATATTCG AATTCGAACT AAGAAAGGGG ACATTGAAAG CATCAACTTG CACTATGGGG	720
ACCCTTTTAT CTTTATGGAG GAGTTTTATC AGGATACAAA AGAAATGGTC AAGATAACTT	780
CTGGTACCTT ATTTGACCAT TGGCAGGTG AAGTGTCAGT TGACTTTGCA CGTATCCAGT	840
ATCTCTTTGA GCTCAGAGAT ACAGAAGGTC AAAATATTTT GTATGGCGAT AAAGGGTGTG	900
TGGAAAATTC TCTAGAAAAT CTTTCATGCA TTGGGAATGG ATTTAAGTTG CCTTAGCTTC	960
ATGAGATTGA TGCCTGCAAG gTTCCTGACT GGGTTTCAAA TACGGTATGG TATCAGATAT	1020
TTCTTGAAAG ATTTGCCAAT GGCAATGCTC TATTAAACCC AGAAGGGACT TTAGACTGGG	1080
ATTCATCTGT CACACCTAAG AGCGATGATT TCTTTGGTGG TGATTACAG GGGATTATTG	1140
ATCATATGAA TTACTTGCAA GACTTGGGTA TFACTGGACT ATATCTTTGT CCCATCTTGT	1200
AATCTACAAG CAATCACAAG TACAATACGA CAGATTACTT TGAAATTGAC CGTCATTTTG	1260
GAGACAAGGA GACCTTTCGG GAACTGGTGG ATCAAGCGCA TCATCGTGGC ATGAAAGTCA	1320
TGCTGGATGC GGTATTTAAT CATATTGGTT CGCAATCTCT TCAATGGAAA AATGTCGTCA	1380
AAAATGGTGA ACAGTCTGCT TATAAGGATT GGTTCATAT TCAACAATTC CCAGTGACAA	1440
CTGAAAAGCT AGTTAATAAG AGAGACTTAC CCTATCATGT TTTTGGTTTC GAGGACTATA	1500
TGCCTAAGCT AAATACAGCC AATCCAGAGG TCAAGAATTA TCTTTTAAAG GTTGCGACTT	1560
ATTGGATTGA AGAGTTTAAT ATCGATGCTT GCGGTTTGA TGTGGCTAAT GAGATTGACC	1620
ATCAGTTCTG GAAGGATTTT CGTAAGGCAG TTTTAGCTAA AAATCCTGAT CTTTATATCC	1680
TAGGAGAAGT CTGGCATACA TCTCAGCCTT GGCTAAATGG AGATGAGTTC CATGCCGTCA	1740
TGAATTATCC TTTATCTGAT AGTATCAAGG ACTATTTCTT ACGAGGAATT AAGAAGACAG	1800
ACCAGTTCAT CGATGAAATC AATGGAGAGT CTATGTATTA CAAGCAGCAG ATTTTCAGAGG	1860
TCATGTTTAA TCTCTTGGAT TCACATGATA CAGAGCGAAT CCTGTGGACG GCCAATGAAG	1920
ATGTTCAACT GGTAAATCA GCCTTAGCCT TTCTCTTTTT ACAAAAAGGA ACACCGTGCA	1980
TTTATTACGG AACCGAGCTA GCCTTGACTG GAGGACCAGA TCCAGATTGT CGTCGTTGTA	2040
TGCCTTGGGA ACGTGTATCA AGTGACAATG ATATGCTGAA CTTTATGAAG AGGCTGATTA	2100

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AAATTCGGAA ATACGCGTCA GTAATCATTT CGCATGGCAA GTATAGCCTT CAAGAAATCA	2160
ACTCTGATCT AGTAGCTCTG GAATGGAAAT ACGAAGGACG GATCCTCAAA GCAATATTCA	2220
ACCAATCAAC AGAAGATTAT CTTTTAGAGA AAGAAGCAGT AGCACTAGCA AGCAATTGCC	2280
AAGAATTGGA TAATCAGCTT GTCATCTCTC CAGATGGATT TATGATTTTC TAAAACTAG	2340
TTGATGAAGA TTATGGTACA TTTCATACCT TATATAGTAT AATAAGGCTA GTTACTAAAC	2400
TTGTAAAGGA GAACTTAAAT GAATTGTAGA GGACATGAAA CAAGACAAAG AATTGTTAGA	2460
GATTTTGAAG TTCAGCCTAA AGCACATATT AAGCTGTTAG CAAATCAACA AAAACATAGT	2520
GATGCAGGAG CAACTATTGA AGATGAATAT TATGTATTTA TCGCTGAGAG TAAAATTGAT	2580
GGCAAGAAGG AAGTTATTCA GTGTTGCATG GGTGCGGCAA GGGATTTTTT AGAACTAATT	2640
AATCACAAAG GGCTACCTCT TTTTAATCCG CTTGTAGGTG ATTCTCATGT AAATAATAGA	2700
CAAGAATATG ACAATACAGG GAGTGGAAAT TTATAACCTG AAAAGTGGAA TGAACTGCA	2760
AAGCAGCTTT ATAATGCTAT AATGTGGTTG ATTATTTTAT GGAATGCTAA GCCGGATACA	2820
CCTTTATTTA ATTTTAAAGA CGAAGTAATT AAGTATAAAA CATATGAGCC TTTTGAAAGC	2880
AGTATAAAAA GAGTAAATAC TACTATAAAG AATGGTAGTA AAGGGAAAAC TCTGACTGAG	2940
ATGATTAATG GCTACAGAGC GGATAACGAT ATTAGAGATG AAATTTGTAA CTTAATATT	3000
CTGAAAAATA AAATTCGTGA TATGAAAAAC CAACAAGGAA ATACAATGGA ATCTTACTTT	3060
TAGTTATTGT TGAATTTTGG GTATTCTATA AAATATCCTA ATTGAGATTT AAATAGTAGA	3120
CTATACAATA TAGTTAAAT ATCAGTAAAA ACAACACTTT ATTGAGGTAT TGGATACGCT	3180
TTGCTAATAG CCTAATAATC ACATGTGGAG TGTGCTACA ACGAAAAAGG TGATAATCCT	3240
TGATTTCAAG CTATTTTATA AGCATTTTGT CTTGTAGAT AAAGGCAATT TTGACAATAA	3300
AAATCCTAAA AGGTGAATCG TTATAGATGT ATTTGTAGAT ATCGTTTGCG CATCGAAAAA	3360
ATTAATACAA GAATAAATAT TTATAGCTCT TTAGGTGACT TTTATAGAAG TAAAGTTTAG	3420
GATAGAAAAA CAAGAAATAA CGCACCATT TGGGTGCGTT ATGCTTTTTT ATGCTATAAT	3480
GGATTTATAA AAATAAAGGA GTTTGCTATG ATTGGAAAGA ACATAAAATC CTTGCGTAAA	3540
ACACATGACT TAACACAACCT CGAATTTGCA CGGATTGTAG GTATTTACAG AAATAGTCTG	3600
AGTCGTTATG AAAATGGAAC GAGTTCAGTC TCTACCGAAT TAATAGACAT CATTTGTCAG	3660
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CGACTCTATC GTTATCAAGA TAGTCAGGGA ATTAGCATTG ATGATGAGTC TAATCCTTGG	3840
ATTTTAATGA GTGATGATCT ATCTGATTTG ATTCATACGA ATATCTATCT AGTAGAACT	3900

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TTTGATGAAA TAGAGAGATA TAGTGGCTAT TTGGATGGAA TTGAACGTAT GTTAGAGATA	3960
TCTGAAAAAC GGATGGTGGC CTAATGGAAA TCCAAGATTA TACTGATAGT GAATTCAAAC	4020
ATGCTTTAGC AAGGAATCTT CGTTCCTGA CAAGAGGAAA AAAGTCCAGT AAGCAACCTA	4080
TAGCGATTTT GCTTGGAGGG CAAAGTGGTG CCGTAAGAC TACAATTCAT CGTATTAAAC	4140
AGAAAGAATT TCAAGGAAAT ATTGTTATCA TAGATGGTGA TAGTTTTCGT TCTCAGCATC	4200
CACACTATTT AGAACTGCAG CAAGAATATG GCAAAGACAG TGTAGAATAT ACCAAAGATT	4260
TTGCAGGAAA AATGGTAGAG TCTTTAGTAA CAAAATTGAG TAGTTTGAGA TACAATCTTT	4320
TGATAGAGGG AACTTTACGA ACAGTTGATG TTCCAAAGAA AACAGCACAA CTCTTGAAAA	4380
ATAAGGATA TGAAGTACAA TTGGCCTTAA TTGCGACAAA GCCTGAATTG TCGTATCTAA	4440
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GTCAGGTAGA GAAGGAGATG TTGCAGGTGG GGGAAAAGAG ACTTAATGAA TTACTTGAAA	4740
AATAACAAT TGATATTTT AGGAGAATAG AAATGAGAGG GTTTAATAAC AAGATAAAGT	4800
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TTCATTTGCA TACACCTGTT TCTTATGATT ACAAGCTATT TTCTAATTGG ACTGCAACGA	4920
AATATAGAAA AATTACTGAA GATGAACTAT ATGATATATT TTTTGAAAAT AAGAAAATAA	4980
AAGTTGATAA GACAATTTTT TTTAGTAATT TTGATAAGGT TGTTTTTTCT AGTTCAAAG	5040
AATATATTAG TTTTCTTATG TTAGCAGAGG CAATCATAAA AAATGGAATA GAAATAGTTG	5100
TAGTAACTGA TCATAATACT ACCAAAGGTA TTAATAAGTT ACAAATGGCA GTCTCAATCA	5160
TAATGAAAAA TTATCCGATT TATGATATAC ATCCTCATAT TTTACATGGA GTAGAAATTA	5220
GTGCAGCAGA TAAATTGCAT ATTGTATGTA TATATGATTA TGAACAAGAA TCATGGGTTA	5280
ATCAATGGTT AAGTGAAAAT ATTATAAGTG AGAAAGATGG AAGTTATCAA CATTCACTGA	5340
CTATAATGAA GGATTTCAAT AATCAAAAAA TAGTTAACTA TATTGCTCAT TTCAATAGTT	5400
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TATTCTCTAT AAAGAAGTTG GTGTATTAAG TTTGGGACAA AAAGTTGTAG CCATGCTTGA	5580
TTTTTTATTA GCATATAGTG ATTATTCTAA AGACTTCAGA CCATTGATTA TTGATCAGCC	5640

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TGAAGACAAT CTAGACAATC GTTATATTTA CAGGCATTTA GTTCAGCAGT TTAGAGATGT	5700
GAAAGCTCAA CGTCAAATTA TTTTAGCAAC ACATAATGCT ACAATTGTAA CAAATTCTAT	5760
GACAGATCAA GTTGTATTTA TGGAGTCAGA TGGAGTTAAC GGATGGATTG AATCACAGGG	5820
ATATGTTAGT GAAAAATATA TAAAAAATCA TATCATCAAT CAATTAGAGG GAGGAAAAGA	5880
TTCCCTCAAG CATAAAATGT CTATATATGA GACGGCTTTA TCAGAGTAGA GTCAGAAAAA	5940
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TCCAAGTCCT CTGTGGATAT TTGCTGCAGA TGAAACCAAT AGCGACTCCT AAGCCTGAAT	6060
ATCGTGAGGT AGGGGGGATA GGAAGGAATT AGCGAAATCA AGGTTCCTACA AACAGAATCG	6120
TGACTTGAAG CCATATATAG CGGATGAGGA ACTCTAAAA CCAATAGGT GTCGTAACCT	6180
ATATACGTAA ATTACGAGAG TAAACTAGGA AAGATGTACG GCTTATTCCG TGAGCGTTTA	6240
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AATGGAATG GAGCGAAGAA GTGAACAATT AAATGAATAC CTCTCTAATT AAATTTGTCA	6360
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TAAATATAGG ACGGTACATG CAGTGGTGTT AGAGATTAGT CCTTACTTGA TTTGTGATAA	6480
CTTCCCCAAA TTTCTTCTGC TATACTTTTC TCAACTTTTA AAAATCCAAC TAAGAATTTT	6540
ACCTGGGGGT TTGGGGGCGG AGCACTAAGT TATCTTATCG TTAGCTGTCA AACTGGTAG	6600
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CAAAAACAGA TGGAGACATG GTTTGCCCTC TGGCAATCCC AAAAAGTAGA ACAAATCAGT	6960
CGTGACGTTT ATGAAGTTTT AATCTTGGCA CAGTCAGAAC GTCAAGTCAC CCAAGAGCAT	7020
GTATCTATTC TCTTAACGTG CGTGCAGGAA TTGATTCAAG AGGTTGCAAA CACCATACCC	7080
CTCAGTAAAG AATTCGTGA GAAGTACATG AGGTAAGCAC ATGGAACATC GTTACCGAAC	7140
CAATCTCAAG AAAGTGTGTT TGTCTGATAG TGAGTTGAAC CAACTAAATA TAAATATCGA	7200
TCAAAGTGGT TGTAATCCT TTTCTGAATA TGCAGACGA ACTCTACTCG ATCCTGGTAT	7260
GAATTTTATC ACGATTGACA CAAACGGTTA CCAAGATTTA GTGTTTGAGT TAAAGAGGAT	7320
TGGCAATAAT ATCAACCAGA TTGCTCGAAG TGTTAATCAA TCTCAGTTAA TTTCTGGTGA	7380
AGAATTGCAG GAGTTGAAAA AAGGAATTGG TGAATTGATA AAAGAAGTTG ATAAGGAATT	7440

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TAATCTGCAA GCGCAGAAGC TAAAGGAGTT CCATGGTCAT CACTAAACAC TTTGCCATTC	7500
ACGGAAAGAG TTACCGCAGA AAGCTTATCA AGTACATTCT CAATCCTGAG AAAACCAATA	7560
ATCTTGCCTT GGTGTCGGAC TATGGCATGA AGAATTTTCT GGACTTTCCT AGCTATGAGG	7620
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ACGACAGGAT GGAAGAAAAT CAACGAAAAA TACACGCTCA CCACATCATT CAGTCTTTCT	7740
CGCCAGAGGA TCATATCACT CCTGAACAAA TCAATCGGAT AGGTTATGAG ACTGTGAAGG	7800
AATTAACTGG TGGCAAATTT CGTTTTATCG TTGCGACCCA TGTTGATAAA GACCACCTGC	7860
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ACAAGGTGGA GCGAAATCTT CGCATGATTT CTGACCGTTT TTCTAAAAATC GCAGGTGCTA	7980
AAATCATTGA GAACCGCTAT TCTCACCAGC GGTATGAAGT CTATCGTAAG ACTAATCACA	8040
AGTATGAACT CAAGCAGCGA CTCTATTTTT TGATGGAACA TTCTAGGGAC TTTGAGGATT	8100
TCAAAAAGAA TGCTCCGCTA CTACATGTGG AGATGGATTT CCGTCACAAG CATGCCACCT	8160
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AGCCTTACAC AGAAGAATTT TTTAAGAACT ACTTTGCCAA AAGAGAAATA GAAAGTCTCA	8280
TGGAATTTTT ATTGCTGAAA GTTGAGAATA TGGATGATTT ACTTCAGAAA GCAAAACTTT	8340
TTGGACTAAC TATCAATCCT AAACAAAAGC ATGTTTCTTT TCAATTTGCA GGAGTGGAGG	8400
TAAAGGAGAC AGAGCTAGAC CAGAAAAATC TTTATGATGT AGAGTTTTTC CAAGATTATT	8460
TTAAAAATAG AAAAGATTGG CAAGCTCCAG AAAGTGAAGA TTTCGTTCAA CTTTATCAAG	8520
AAGAAAAGTT ATCCAAAGAA AAAGAACTTC CAAGCGATGA GAAGTTCTGG GAGTCCTATC	8580
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AAATTGAAAA AGTAGTGGAT GATGGAATTT ACGTCAAGGT CAAGTTTGGT ATTCGTCAGG	8700
AGGGACTTAT CTTTGTGCCG AACATGCAGC TTGATATGGA AGAGGATAAG GTGAAGGTTT	8760
TCATCAGGGA AACCAGCTCC TACTATGTCT ACCACAAAGA CGCTGCCGAG AAAAATTGTT	8820
ATATGAAAGG TCGAACCTTA ATTAGACAGT TCAGCTATGA AAATCAAACC ATTCCATTAC	8880
GCAGAAAAGC GACAGTCGAT ATGATTAAAG AGAAGATTGC GGAAGTGGAT GCTTTGATTG	8940
AACTGGAAGT AGAAAATCAA TCTTATGTCA CGATTAAAGA TGAGTTAGTG CATGAACTAG	9000
CAGCGTCTGA ATTGAGAATC AATGAGTTGC AAGAACGAAT GTCAACCTTG AATCAAGTAG	9060
CAGAATATCT ACTGGCTTCA GTTGAAAGTA AGCAAGAAAT GAAATTAAAT CTTTCAAAAC	9120
TGAATATAAC TGAGAATATC AGTGCTAATA TTGTTGAGAA AAAATTGAAG AGCCTGGGGA	9180

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ATCAACTGGA ATTGGAAAGG GGCAGGTATG AAAAGATGGT AGT

9223

(2) INFORMATION FOR SEQ ID NO: 60:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 6827 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 60:

TCTGCTGGCT ACCATCATCT GACTTGGGCA AGACCAAAGT CTTAGTTACA ACTGTATTCT	60
TCTCAGCATT TTCAATAACT GGCAATGCCG ACTGAAGCGT ATCTTTTCT GTTTTGTAG	120
CTGGTCCAGT TTCTTTTTC TGTCCGCAAC CAACCAGGAC AAAAAGGAAA GCTAGACTAA	180
CAAGAACTAT TTTTTCATT TCTTCTTCT TTCTTTTGA AATTAATA GAATAAGACT	240
GGGAAGTGCT CCCAGCCTTG ATGTTTATAG AGCTGCACGC AAACGTGCTT CTGCATTTTC	300
TACATTACGG ACAGAGCGTG GTAGGAAGGC ACGAATATCG TCTTCCTTGT AGCCAACTTG	360
CAGGCGTTTT TCATCTACAA GGATTGGGCT CTTTAAATTT CTCGGTGTTT CCATAATCAG	420
ATTGAGAACT TCATTGACAC TCAATCTTC AATATCCACT CCAAGGGCTT TGGCATAGCG	480
ATTTTGTAGAC GAAACGATGC TGGCTATTCC GTTATCTGTT TTGGTTAGAA TATCCAGTAA	540
TTCTTCTCTC GTAATTCCTT CTTTACCAAG GTTTTGTCT TTATAACTTA ACTGGTGGGC	600
ATTGAGCCAG GTTTTGTCTT TTTTACAGCT AGTACAACCT GAGACTGTAT AAATTTTAAT	660
CATGTACCTA CCCCTTTCGC TACATGTTAC TATCAGTTTA GTCTATTATA CCATAAAAAA	720
CATCCGACTT GCGACCTATT TTTAATTTTT TTTGACTTTT TTCGTCATTT TCGTACTTTT	780
TTCTTGACAA ACAACTAAAT GACTATCAAC TCTTTTGGAG CTAGGGTCAA TAATTCACAA	840
CCTGTCTCTG TAATCAGGAT ATCATCCTCG ATACGAACGC CATATTGCCC TTCGATATAG	900
ATACCTGGTT CATCGGTCAA GGCCATACCT GTCTTAATAG TTTCTGTAGA AGTCTGACTA	960
AAGTAGGGTT CCTCATGGAT ATCCAGACCA ATACCGTGGC CAATGCCGTG AGTAAAGTAG	1020
TCACCATAAC CTGCCTCAAT GATAATATCA CGAGGGATTT TGTCAAAGTC ACGGAAACCT	1080
AAGCCTGCCT TAGCTTGGTC AATCAAGGCT TGGTTAGCTT TTAGAACCGT ATTGTAAATC	1140
TCTGCCTGCT CATCGCTAAC ATGCCCTAGA TAGATAGTCC GGGTCATATC ACTGACATAG	1200
TGGTCATAGA GACAGCCGAA GTCCATGGTG ATGGCTTCTC CCAACTCCAC TGGTTTGTGC	1260
ATTGGATGGG CATGGGGTTT AGAAGAATTG ATACCGCTAG CTAGGATCGT ATCAAAAGAT	1320
AAGCCAGATG CTCCCAACTC ACGCATGCGG AAATCAAGGA AGTTGGCAAT CTCAATTTCA	1380

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GTTTTTCCTG GTTTGATAAA GTCAAGCGCA TCGCGGAAAG CTTGGTCTGA GATAGAACAA	1440
GCCTTGCGAA TCGCTGCAAT CTCTGCCTCA TCCTTAATCA TACGAAGACC TTCCACAAAC	1500
TGAGTTTGTG GAAGCAAGTT CAAACCTGCA AAAGCTGCCT GCATACGGTG GTAATAAGAC	1560
ACTGAAATCT CATCTTCAAA ACCGATACGA GTCAAGCCCA TGTCCCTAAC AATTCCTGCA	1620
ATGACAGCCA ATTCATCAG ATCAGCCACA ATCTCAAAAC CACTGGTTTC TTGCTTAGCT	1680
GCGATGATAT AGCGAGAGTC TGCTACTAAG ACCTGACGGT CACGACTGAT AAAGACTGTT	1740
CCGTTTGAGC CCCAAAAACC AGTCAAATAA TAGACGTTTT TAAGATTGTT GATGATGATA	1800
CCATCTAGTT CTTTTCTTG CATTTTAGCT AGAAATGCTT GTACGCGTTT ATTCATGATG	1860
TAACTTTCCT TTCAAATAGT GTCTGTATA GCTGGCTTCG TTGGCAGCTA CTTCTTCTGG	1920
AGTTCCTGTT ACGATGATGG TTCCACCACC GACACGCCC TCAGGTCCCA AGTCAATGAT	1980
ATGGTCTGCC GTCTTGATAA CATCCAGATT GTGCTCGATG ACGAGGACTG TATTGCCATC	2040
GTCTACAAAG CGAGCTAAAA CCTTGAGCAG GCGAGCAATG TCCTCTGTAT GAAGCCCTGT	2100
CGTCGGCTCA TCCAGAATGT AGAAAGATTT TCCTGTGCGT CGTTTGTGGA GTTCGCTAGC	2160
TAACTTCATA CGTTGGGCTT CTCCCCAGA AAGGGTGGTA GCTGGCTGTC CCAAGGTCAC	2220
ATAGCCTAGC CCTACATCCT TGATGGTCTG GAGTTTGCCT TGAATTTTCG GAATGTGTTG	2280
GAAAAATTCT ACCGCATCGT TGACCGTCAT ATCCAAGACC TGCGAAATAT TCTTTTCCTT	2340
GTAGTGAAT TCTAGGGTTT CACTGTTATA GCGGGTTCG TGGCAAACCT CACAAGCCAC	2400
ATAAACATCT GGCAAGAAGT GCATCTCAAT CTTGATAATC CCGTCACCTG AGCAAGCTTC	2460
ACAGCGACCT CCCTTGACGT TGAAACTGAA GCGCCCCTTC TTGTAGCCTC GAATCTTGGC	2520
TTCAATTGTC TGAGCAAAAA GGTACGTAT ATCGTCAAAA ACTCCTGTAT AGGTAGCTGG	2580
GTTAGACCTC GCGTCCGTC CGATAGGGCT CTGGTCAATA TCAATCAAAC GGTCGACATG	2640
CTCAATCCCT GTAATAGTCT TAAACTTACC AGGTTTGTCT GAATTACGGT TGAGCTTCTG	2700
GGCAATGGCT TTTTGTAGAA TGCTGTTGAT TAGAGTCGAT TTCCCTGAAC CCGACACACC	2760
TGTCACGCG ATAAATTTTC CTAGTGGAAG GCGAGCCGTG ACATTTTGCA AGTTGTTCTC	2820
ACGCGCTCCT ATCACTTCAA TAAAACGACC ATTTCCGACA CGGCGCTCTT CTGGTACTGG	2880
GATGACACGT TTGCTGACA AGTACTGACC TGTGATAGAC TTGCTGTTGC GAGCCACTTG	2940
CTTAGGTGTA CCTGCTGCAA CAATCTCACC ACCAAAAACA CCGGCACCAG GACCAACGTC	3000
AATCAGATAA TCAGCCTCAC GCATGGTATC TTCGTCGTGT TCCACCACGA TAAGAGTATT	3060
GCCCAAGTCA CGCATCTTTT TCAGACTGGC AATCAGGCGA TCATTGTCCC TCTGGTGAAG	3120

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ACCGATTGAC GGCTCGTCTA GGATATAGAG GACACCTGAT AGGTTGGAAC CAATCTGGGT	3180
TGCCAAACGA ATGCGCTGAC TTTCCCCACC TGAAAGGGTT CCTGCTGAAC GTGACAGGGT	3240
TAGATAGTTA AGACCCACAT TATTAAGGAA GGTCAAACGA TCCTTGATTT CCTTGAGAAT	3300
GGGACGAGCA ATGATGGCTT CATTTTCAGA CAAAGTTAAC TGGCTCACCA AGTCCAAGTG	3360
GTCAGCGATA GACAGGTCTG AGATTTCTCC AATATGTGGC CCTTGCTGGC CGCCACACG	3420
GACAGACAAG GCCTGGTCAT TGAGACGATA GCCTTGACAG GTTCCGCAGG TCAGCTCATT	3480
CATGTAGAGA CGCATCTGAG TGCGAGTGTA ATCGCTATTG GTTTCATGGT AACGACGTTT	3540
GATATTATTG ATAACCTCCCT CAAACGGAAT GTCGATATCG CGCACGCCAC CAAATTCATT	3600
CTCATAGTGG AAATGGAATT CCTTACCATC TGACCCATAG AGAATCAAGT TCTTATCTTC	3660
TTCTGACAGG TCCTCAAAAG GCTTATCCAT AGCCACTCCA AAGACTTTCA TGGCCTGCTC	3720
TAACATGTTT GGATAGTAGT TGGATGAGAT AGGATTCCAA GGTGCTAGCG CTCCCTCACG	3780
TAAGGTTTTC CTAGCATCTG GCACTACCAA ATCAGTATCC ACCTCCAGCT TGATGCCCAA	3840
GCCGTCACAC TCACTACAAG AGCCAAAAGG AGCATTGAAA GAAAAGAGAC GAGGCTCTAA	3900
CTCTGGGACA GTAAAACCAC AAACTGGACA GGCATAATGC TCAGAGAACA ACAACTCCGA	3960
GTCGTCCATG GTGTCGATAA TGACATAACC TTCTGCAATA CGAAGGGCAG CCTCAATGGA	4020
ATCAAAGAGA CGACTACGAA TGCCCTCCTT GATAACAATA CGGTCAACCA CGACATCGAT	4080
ATTGTGTGTC TTGCTCTTAG ACAACTCTGG CACTTCGGTC ACATCATAGA CTCCCCATC	4140
CACACGGACA CGAACATACC CGTCTTTCTG AACCTTCTCG ATAACACTCT TATGTTGGCC	4200
TTTTTTCTTG CGGATGACAG GAGCCAAGAT CTGCAAGCGC TGGCGTTCAG GTAACCTCAA	4260
AACCTTATCA ACGATTGCT CCACAGAAGA AGCATTGATA GCTCCATGTC CGTTGATACA	4320
GTAAGGCGTC CCCACACGTG CGTAGAGGAG ACGCAGATAG TCATTGATTT CAGTCGTCGT	4380
TCCCACCGTC GAGCGAGGAT TTTTACTAGT CGTTTCTGG TCGATGGAAA TAGCTGGGCT	4440
GAGACCATCA ATGGCATCTA CATCTGGTTT TTCCATATTT CCCAAGAACT GACGAGCGTA	4500
GGCGGACAAA CTCTCTACAT AGCGACGTTG TCCCTCCGCA TAGAGAGTAT CAAAAGCCAG	4560
ACTGGACTTC CCTGAACCTG ACAAGCCAGT CACGACAACC AACTTGTCTC GCGGAATCTC	4620
CACATCAATA TTTTTTAAAT TATGGGCACG CGCCCCATGA ATGACAATTT TATCTTGCAT	4680
CTTTGTTCTT TCTAGTCCAT TATTGCTTAC CATATACCA AAAAAAGTGA GATTCTATTA	4740
CCCAAAAGGC CGATTTTGTA GTATAATAGT ACAGTGTGAA AAAATCTGAA AAATGAGAAA	4800
GGATAAGGGA TATGAAACAA GTTTTCTCT CTACAACAAC TGAATTTAAA GAGATCGATA	4860
CGCTTGAACC GGGTACTTGG ATCAATCTCG TCAATCCGAC TCAAAATGAA TCACTCGAAA	4920

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TCGCCAACAC CTTGATATT GATATTGCTG ACCTTCGAGC ACCGCTCGAT GCGGAAGAAA	4980
TGTCTCGTAT TACCATTGAA GACGAGTATA CCCTGATTAT CGTAGACGTG CCGGTCACGG	5040
AGGAAAGAAA TAACCGCACC TACTACGTAA CCATCCCGCT TGGTATTATC ATCACTGAGG	5100
AAACCATTAT CACTACGTGT TTGGAACCAC TACCTGTCCT TGATGTCTTT ATCAACCGTC	5160
GATTGCGTAA TTTCTATACC TTCATGCGTT CACGTTTTAT CTTTCAAATT CTTTATCGCA	5220
ATGCAGAGCT TTACCTAACA GCCCTTCGTT CAATCGACCG CAAGAGTGAA CAAATCGAAA	5280
GTCAACTGCA TCAATCAACT CGTAATGAAG AATTGATTGA GTCATGGAA TTGGAAAAAA	5340
CTATCGTCTA TTTCAAGGCC TCCCTCAAAA CAAATGAGCG CGTGATTAAAG AAATTGACCA	5400
GTTCAACCAG CAATATCAAG AAATACCTTG AGGACGAAGA CCTGCTTGAA GACACCTGA	5460
TTGAAACCCA ACAGGCCATC GAGATGGCAG ATATTTATGG AAACGTCTTG CATTCTATGA	5520
CAGAGACCTT TGCCTCTATC ATTTCTAACA ACCAGAACAA CATCATGAAA ACCTTGCCCC	5580
TTGTGACCAT CGTCATGTCC ATCCCAACCA TGGTCTTTTC TGCCTACGGG ATGAACTTTA	5640
AGGATAATGA AATCCCCCTA AACGGAGAGC CAAATGCCTT CTGGTTAATC GTCTTTATCG	5700
CCTTTGCTAT GAGTGTCTCG CTCACTCTCT ATCTCATCCA TAAAAAATGG TTCTAAGAGG	5760
AGTTCCTATG TCTCAAATTG ATCTACAAAA ATtAACTAAG AAAAACCAAG AGTTTGTTCA	5820
CATTGCTACC CAACAATTCA TCAAAGATGG GAAAACAGAC GCTGAAATCC AGACTATTTT	5880
TGAGGAAGTC ATTCCCCAAA TCCTTGAGGA GCAATCTAAA GGTACAACCTG CCCGTTCCCT	5940
ATACGGCGCA CCAACTCATT GGGCTCATAG CTTCACTGTC AAAGAGCAGT ACGAAAAAGA	6000
GCATCCAAAA GAAATGATG ACCCAAACT GATGATTATG GACTCAGCTC TTTTCATCAC	6060
TAGCCTCTTT GCCCTTGTC GCGCCCTCAC AACCTTCTTT GCGGCAGACC AAGCTTTCGG	6120
CTATGGATTG ATTACTCTTC TATTAGTTGG ACTGGTTGGT GGATTGCTT TCTACTTGAT	6180
GTACTACTTT GTTTACCAAT ACTATGGACC AGATATGGAT CGCAGTCAAC GTCCACCTTT	6240
CTGGAAATCT GTACTAGTTA TCCTAGCTTC TATGTTCTTT TGGTTGCTTG TCTTCTTGC	6300
AACAAGCTTC CTACCAGCTA GCCTTAACCC AGTACTGGAT CCATGCCCAC TAGCTATTAT	6360
TGGAGCAGCC CTCCTAGCCC TTCGCTTCTA TCTCAAGAAA CGCTTGAATA TCCGTAGTGC	6420
AAGTGCAGGA CCAACACGCT ATCAAGAATA AGAAAACGAT AAAAGCAACT GCAGGTGCGG	6480
TTGCTTTTTT ACTTACTTTT TTGAGTTATA TTCAATGAAA ATCAAAGAGC AACTAGGAA	6540
GCTAGCTGCA GGTGCTCAA AGCACAGCTT TGAGGTGCA GATAAACTG ACGTGGTTTG	6600
AAGAGATTTT CGAAGAGTAT TAAAAGTATT CTTCTGAAAT CCCACATAGC TTTCTCTTAT	6660

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ATTTTGTGAT AAAATAGGCT CAATCTATTT CTAGGAGGAT GAGATATGGT TTCTACTATT	6720
GGTATTGTTA GTTTATCTAG TGGCATTATC GGAGAGGATT TTGTCAAACA CGAAGTGGAC	6780
TTGGGTATCC AACGTCTCAA GGATCTGGGA CTCAATCCCA TCTTTTT	6827

(2) INFORMATION FOR SEQ ID NO: 61:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 11864 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 61:

CTGGCTAGTT GCATAGAGCA AAGTTGCTTC TTCATCAACA AAACCGTTCA TTTCAAATA	60
GGAAAGCAGC TCATCAGGAC TCTCCAAACG AATCCCTTTG TAATCCAGCT CAACTGCCAC	120
CTCTTTCAAG GCTGCAAGAA GAAGTGTTCC CAGGCCCTGT CTCTGATGGT CAAACTCGAT	180
GACTAAAGAA TGTACTTTTA GACATTGCGG ATTGTCTGAC TGGGGACTTG ATAAAATATA	240
GCCTAAAAGT TGATTTTCAT CCCTAGCTAG AAGAAAGGTA TCCGCACACT TACGGATACT	300
TTCTTCTAAA ATATGGGAAA GTTGCTGCTT TTCAGCTGGA AAAGACGAGG TCTGAAGTGC	360
CCCTATCTCA GGCAAATCAG ACTTGCTTGC CTGAATGATC TTAATTGGAA TTTCCATGGG	420
AACATCCTAT TGAACATTGC TTGTCAAGTT AGACAAGAGA CGCTCAAATG AGTATTCATA	480
GGTTTGGATG TCTCCTGCTC CCATAAAGAC GTAAACAGCA TTGTCATGGT CTAGGAGTGG	540
AGAAACATTT TCAACAGTAA TCACTTGGTG TTTTGTGTG ATTTTGTGG CTAGGTCTTC	600
TACCTTAACG TCACCATGAT CTACTTCACG AGCCGAGCCA TAAATTTGCG CTAGATAAAC	660
AGCATCTGCT TGGTTTAAAG CATGGGCAAA GTCGTCCAAC AAGGCAATGG TTCTTGTAAG	720
GGTATGCGGT TGAAGACTG CTACAATTTT CTTGCTTGGG TATTTCTGAC GAGCCGCATC	780
CAAGGTCGCA ATAATTTCTG TTGGATGGTG GGCAAAGTCA TCGATAATCA CTGTATCATT	840
GACAATTTTC TCAGTGAAAC GACGTTTAAAC ACCGGCAAAT GTTTTCAAGT GCTCACGCAC	900
CAAGTCAAAA TCAATCCTG CTGTGTAAAG AAGACCAATA ACGGCTGTCTG CATTTCATGAT	960
ATTGTGACGA CCAAGGTTG GAATGTGGAA TTGCCCAAG TTTTGTCCAC GGAAATGAAC	1020
GGTGAAGGTT GAACCAAGTT TTGAACGAAG AAGATCACTA GCTACAAAGT CATTGCCTTC	1080
AGCTTCAAAA CCATAATAAT AAATTGGTGC ATCAGACGTA ATCTTACGCA ATTCAGCATC	1140
TTCACCATAG ACAAAAAGAC CCTTGGTGAT TTGTTTGGCA TAGTCGTAA AGGCATTAAA	1200
AACATCCTCG AGACTTGTGA AATAATCTGG ATGGTCAAAG TCAATGTTGG TGATAATAGA	1260

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GTATTCTGGG TGGTAAGGCA TGAAGTGACG CTCATATTCG TCAGATTCAA AGACAAAATA	1320
TTTGGCATTG GCCGAACCAC GACCTGTCCC ATCTCCAATC AAGAAGCTGG TATCTGTAAT	1380
GTGAGACAAG ACATGAGACA ACATACCTGT CGTTGAAGTT TTTCCATGTG CTCCTGCTAC	1440
TCCCATGCTA ACAAAGTCAC GCATAAAGCT ACCTAGAAAC TCATGGTAAC GTTTGTAGCT	1500
GATACCATTT TGGTCCGCAT AGGCAATTC GACGTTGTTA TCTGGACGAA AGGCATTTC	1560
AGCGATAATT TCCATATCAC CGTCTAGATT TTTTTCATCA AAAGGAAGAA TGGTAATTCC	1620
TGCCTGCTCA AGACCGCGTT GGGTAAAGTA GTACTTTTCA ACATCTGATC CCTGAACCTT	1680
GTGCCCCATC TGGTGCAACA TCAAGGCCAA GGCACTCATC CCTGATCCCT TAATTCCGAT	1740
AAAATGATAT GTCTTTGACA TGTTTTCTCC CCTATTCTGT CATTCTGGTC AGATTCAACT	1800
CTTGGGCAAC CCGACGTTCT TGTTCGTGTT GTTACTTTT TTTATTGTAG ATTTGGCTCT	1860
TCTTTAGAAA ATCATAATTG TTTTCTTTG GAGCAGGTGC TGACACTTCT TCATTCTTGG	1920
TAGGGATAGA ATGAACTTCT TCCGCCAAGA TATAATGAGA CTGGGTCAAT TTTTGGCTAT	1980
ATTTGACAAA TTCACCAGGA TTTTCCTTTT GGAAAGGAGC TGTCGGTTGA TTGCCCTGTC	2040
TAAC TAGACT GGGCTGAGAA TGACGTCTCG CAAGGCTGAA ATCCTGAGTT AGGTAGTTAG	2100
CAGAGCGTTT CTTTTC AAG TCCGCACGCG CTCTTCACG CGCCACCTCC GCATAGCTCT	2160
TTCTTCTTTT TTTAACCCT AAAGGAGCCT TTTTAGGTTT TTCGACTTGC TTTCAATCG	2220
GTTTTACTGG TTTTCTTCA GCAATAGGAG CCCATTCTAA ATAATTTTTA TCTCGATACT	2280
CACCCTTGAT ATTACTGATC AGATCAGACT CATCATAGAG ATTCATGACT GGCATTTTCAG	2340
TCAACATGAC CTCGTATCT GACACCAATG GAAATCGTTC TTGTTTCATT TTCTATTTCC	2400
TTTCAACACT TCATTATAGC GTATTGTCTT GATTTTTC AAG GTGCTGGCTT CAGAAATTCC	2460
CAAAATTTCT CTAATTTCTG CTAGGGTCAG ACTACCACGT GACTCTGTGC CGTCCAATAC	2520
TTGTGACACC AGATGTTTCT TTTGTTCTTG GAGTTCCTGA ATTTTCTT CAATGGTTCC	2580
CTTGGTCACC AAGCGATAGA CCTCAACCGT TTCTTCTGA CCCATCCGAT GGGCACGGCC	2640
AATGGCTTGC GCTTCCACCG CAGGATTCCA CCAAAGGTCA ACCAAGATCA CTGTATCTGC	2700
ACCTGTCAGG TTCAGACCGA CCCCACCAGC CTTGAGGGAA ATCAGAAAGG CATCTCTTTC	2760
TCCTTGGTTA AAGGCCTTGG TCATGTCTTG TCTTTCCTTG GCTGGGGTTG AACC CGTAAT	2820
TTTAAAGGAA GTCAGGCCA AGTCTGGCAG TTCTTGTTCA ATTTTTC AATTCCCTT	2880
GAACTGAGAG AAAATCAAGA CACGGTGTCC GCCGTCTGCC ACCTGTACCA GTAGGTCTCG	2940
GAGACTATCT AGTTTCCCGC TGGCTCCCTG ATAATCTTCC ATAAACAGGG CAGGAGTGTC	3000

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ACATATTTGA CGCAAGCGCA TCAAACCAGA TAAAATTTCC ACACGACTTC GCTGAAATTC	3060
CTGTTCTGAC ACTTGAGCCA GATGGTCTCG CATCTGTTGT AACTGGGCAA GGTAAATAGC	3120
CTTTTGCTGG TCTTCCAGTT CATTTTATA AACCACCTCA ATCAAGTCTG GCAATTCAGT	3180
CAGAACTTCT TCTTCTTGC GTCGCATCAC GAAAGGCTTG ATAAACTGAG CCACTCGCTC	3240
TGCTGGCAAT TTCATAAATT CTTTCTTGCT TGGCAAAAGT CCAGGCATGA CGATTTGGA	3300
AATAGACCAC AACTCACCCA GATGGTTTTC AATCGGAGTT CCTGACAAGG CAAAGACCGA	3360
CGGCACCACA AATTGTCTCA AGGTCTGGGC AATCTGGTC TGGGCATTTT TCATGACCTG	3420
AGCCTCATCT AAGAAAAGGA AGTCAAAGGC CATCCCTTGA TAAACTCAC TGTCTGACG	3480
GAAGGTGGCA TAGCTAGTCA CATAGATTG ATGGCTCTCG GCAAGAATCT CCTCACGACT	3540
TGCTTTCAAA CCATGAACAA CAGTCACATC CAACTGTGGA GCAAATTTCT GAAACTCATC	3600
TGCCCAGTTG TAAATCAAAC CCGACGGAGC GAGAATCAAA ACCCGACTTT CTTTGTGTCAC	3660
TTGACTAGTC AAAAAAGCAA TGGTCTGAAG GGTTTTCCCA AGTCCCATAT CATCAGCCAA	3720
AATCCCACCA AAACCATAAT GATGGAGCAT CTGCAACCAG CCAATTCCTT TTTCTGATA	3780
ATCTCGCAAG TCAGCCTTGA CCTGAGTTGC TTGCAAAGGA AAGTCCTCTG GATGCGTCAA	3840
ATCCTGGGCC AGATTCTGGA ATTCTTGTA AAAAGAAACA CGGTCTCGCC CTTCAAAGAG	3900
ATGAGCTAAA CTGTAGGCCA AGGATTCCG AGCCTGCAAG GTCCCATCTT TTAATTCAAA	3960
TTGCCCCAGT TCCTGTAGAT TTTGGCGAAT TTTCTTGTT TCTTCATCGA AAAAGTAAAC	4020
TTGATTAGAC GAATCAATAT AAAAATCCTG ATTGGCAACC AAGGCCTGCA TGGCTTGGTC	4080
GATTTCTCTC TGGACAATAT TTTGAAAATC AAAGTGGATT TCCAAGAGAC CTCCCTTGGA	4140
GGCAATCTGC ACCTGAGGAC TCGCTAGGCT ATAAAGCTCT TCTAGTTTAT CTGATAGGTC	4200
AACATGCCCG AGTTTTTCAA AGACTGGAAT GATATCATGA AAAAAATGAT AGACAGACTC	4260
CGCTTTTAAG GCCTGACGCC AAGATTGAAA ATCGGCCTCA AAGCCCGCAG CCAAACAGAC	4320
TTGGAAAAAT CTTTCTTCTA AGTCTGCGTC ACTTGAAAAG GGTAATTCCT CTAGCTCTTG	4380
TCGGCTAGAT ACCTGTCTAT TTCCATAATC AAAGTGAATT TCTAAACGAA TCCGATTATC	4440
TTCTTCCCTG TCAAAGTAAA AAGAGGGCGC AAAAGTTTGT ATTTGTAGAC GTTCTGGAGC	4500
TGAAACGGTG CCCATCTGGA TAAAAAGAGT CAGACAGGAG GCCAATTTGT CTCGATCACT	4560
GCTATCAAAT TGCAGGTATT TCTTTCCTTG TTGACCACA GGTAACGCTT TAATTCCTT	4620
GAGAAGACGC ATCTGCTGGT CTGTTAAAA ATAAACCTGA CCTTTATGGA AAAGTACTGC	4680
TCCCTGATAA AAGACATTGA CCCTAGGACT CTCCTGATT TCCATTTCAA AATAATCCGA	4740
GTATTCTGTT ACTGTAAAG CAAATAGATT GGCATCAGCA TGCATATCCT GAAAAAGCAG	4800

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GGTTTGGTAG CTATCCACTT GATGGTCAAA TTGAAAATGG GGCAAGGCCA TCAGTAAATT	4860
CACACCCTGC TCAAAAAAGG TCAGAGGGAA AAAGAGGTGC CGACCTTGGT TTTGGAAAAA	4920
GAGGTCTGGA ACCAGCCCTT CCTCCGTTAG TCCGTGCAAG AAAGTCAAAA GTTCTTGGCT	4980
GGCATCATCA AAGGCTTCCC AAGAAAGAGA CTCCTCATAA ATCTTGCCAA TCATATACGA	5040
CTTTCTCTGC TCGACAATCC TTAaaaaaaAG TGGAATATCC CGAATGACAT AGTATTTTTG	5100
GCTATTGATT TGGCCGATTC TCAGAGTCCA CAAGATATGA TTGGTTCCTG CTTCCACCTG	5160
ACCCACAGCT GATAACTCAT AGGCGCATTC TGATTTTGGA GATAAAATTC GATCCAAAAA	5220
CTTGCCACCC AAGGTCACCT TGGTTTCAAC AGCCTCTTTT TCTTCATGAC CTTCTTCCAG	5280
ACTCCACAAG ATTTCTCTGAC CACGCTCATC ATTTTTCAGA AAATGCTCTA GCGCTGCCAA	5340
ATGCACACAG TAGCCCTCTT TTTGAAAAA ATCACAGGCA CAAAAACCA AATCATCCTC	5400
TAAACTATAG CGCAGTTCTT CTTCTGCAAC GCGAGCGTAG AGCCGATTGT TCTTTTCCTT	5460
GATGATATCA ACCTTACCAG TTTcATAAAG GGCAACACCT TCGATACGAA TTTTCCCCGG	5520
AATCAATTTA GCCATATTTT CACCTTTACC TTATCTTTTT ATTATACCAT ATTTTCGCCT	5580
ATGAAAATAG CCTTCTAGGA AGACTTTTCT CCTAGAAGGC TGGATTTTTA ACGTTTGGA	5640
AAAGTAGCCA CAATCCGCTG ACAGACTTCT TGCAACAGAG ATTTGGGCAT AGCTATATTG	5700
ATGCGGGCAT GGAGACTTC TTCTCTCCA AAATCCAAAC CACGGTTGAG GATAACCTTG	5760
GCTTCATTTC TCAACAATC TTGCAATGTT TCATCAGTCA GGTcATAAGC TGAAAAGTCA	5820
AGCCAAATCA AGTAGGTACC TTGCGGTTTC ATGACCTGA TTTTAGTCTC TTTTCCAAAT	5880
AGATCCATCA CATAATTGAT GTGGTCTTCA AAGACTTGCT TGAGTTCCTC TAGCCAATCT	5940
TTACCGTATC GATAGGCAGC TTCTGTCGCC AAATAACCCA AGCCTGAAAT TTCATGCTGA	6000
TTATTGGCCA ACAGGCCTT CTGGAAGCC AGTCTCAACT TAGGATTTTC AATGACTGCA	6060
TAGGAATTTT TTGTTCCAGC AATATTAAAT GTTTTAGTGG CACTGCTCAA GACGATAGCA	6120
AAATTTTGA AGGCAGGATT GATGGTATTG AAAGACTGGT GTTGTGACC AAAGAGGGTC	6180
AAATCTTGGT GAATCTCATC CGAAACTAAC AAAACACCGT GTTTTGGCA GAGTTGGCCA	6240
ATCTTCTCCA AACTTCTTT TTCCCAAACA CGTCCACCAG GATTGTGAGG GTTGCAAAGA	6300
ACATAGAGTT TAACCTCCTC TTCCACCAA TCCTTTTCAA GTTGGTCAA GTCAATCTCA	6360
AACAGACTAT CCTTTCCAC TAAGGAATTA GTAATCAATC TACGATTATT CAACTTGACA	6420
CTGCGAGCAA AGGGTGGTA GACAGGCGTG TTAATTAAAA CCGCCTCGCC TTCTTTTGTA	6480
AAGGTTTGAA TAGCTGTTGA GATGGCTGGT ACCACACCCT CGATAAAGAC AAGAGCCTCT	6540

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TTGTCAAAGT TGTAACCGTA TTGTGTAGCT TCCCACCTTTT GAACTTCCTT AATTAAGTCT	6600
TCACTGGCAT AGGTATAACC ATAAACCAGT TGGTCTGCGT AAGTTTGCAC GGCTTGGCGG	6660
ATTTCAGGCA AGACCACAAA GTCCATATCC GCTATCCAAG CTGGTAGAAC TTCACTATCC	6720
GTTTCTGTTF CTTTCCATTT ATAGGTATGG TGCCCTAAAC GGTTGGGCAG GCTTGTAATA	6780
TCATATTTTC CCATCTTTGT CTTATCCTTC TATGGCTTGG CGCAAATCTG CAATCAAATC	6840
TCTAGCATCC TCAATCCCAA TAGACAAACG CAAGAGGTCA TCTGTCAAAC CATAAGAATG	6900
GGTACCTCT GCTGGAATAT CAGCATGAGT TTGAGTCGTT GGATAAGTAA TAAGACTTTC	6960
CACTCCACCC AAACCTTCCG CAAAAGAGAA GACCTTGAGA CTGTTCAAAA TATGAGGAAT	7020
GGTGTTTCA TCGGCTACTT TAAAGGAAAT CATGCCTCCA CGACCACTGT AGAGAACTTC	7080
CTTAACGTCT GGAGAATCCT TCAAAAAGGC AACCACCTCT TGGGCGTTAG CTGTTGAGCG	7140
CTCCATACGA AGAGACAAGG TCTTGAGACC ACGAAGCAAC TGGTAGCTGT CAAATGGAGA	7200
CAAGACTGCC CCTGTGTAT TAAGATTGTA AAAAGCTTC TCGTATAGTT CTAAACTATT	7260
GGTCACAACC ACTCCAGCCA AGACATCAAT GTGGCCTGCT AGATACTTGG TTGCTGAATG	7320
GAGAACGATA TCTGCTCCAT CTTCAATCGG ACGTTGGTAG ATAGGGCTAT AGAAGGTATT	7380
GTCCACCACC ACTTTGGCAC CCTTAGCATG AGCCAATTTT GCTAGTTTTT CGATATCAAA	7440
TTCCAACATC AAGGGATTGG TTGGGGTTTC GATATAGAGA ACATCCACAT CCTTTTCTAA	7500
CTCGGCAATC AACTCTTCTT CTGTATTGGC ATAGGTAAAA TGGAAATGAC CTTCTGCTC	7560
CACTTGGTTA AACCAGCGAA AAGAACCACC GTAAAGATCA CGCACTGCCA AGACCTTACT	7620
TCCTACTGGA AAGACGCTAA AGGCCAGTAC AATAGCTGAC ATCCCTGAGC TAGTCGCTAG	7680
GGCATAGTCT GCTGACTCAA TAGCCGCCAA GACTTCCTCA GCCTTACTAC GAGTTGGATT	7740
TTTAGTGCGC GTATAGTCAA ACCCAGTAGA TCGACCAAAC TCTGGATGCT GATAGGTCGT	7800
TGAAAAATGA AGTGGTGCA CCAAAGCACC TGTTGCCTCA TCAGACTTGA TCCCTGCTTG	7860
TGCTAAAAAT GTGTTAATGT GTAATTCCTT GCTCATACAA TTCCTCCAAA TCTATAGTAA	7920
CTATTGTACC ACTTATTTTG TATCCTTCGT TTTCTGTTT TCAAGAGCTA GTTATAGTTT	7980
CAAACTATAT AAAAAGGGAG TTTTTCCTGC TCCCTTTAAT AGACTATAAA ATGGTGAATC	8040
TCAAAAGACA CCTTCACTCT ATCATTGCT CCTGCACAAA ACGAGCATAA CGCTCATGAT	8100
TTTCCAGTAG TTCTTATGA GTTCCTGAGC CAGTGATTTT CCCCTCCTCT AAGAAGAAAA	8160
TACAATCCAC ATCTTTTACC GTTGACAAAC GATGCGCTAT AATCACAACC GTCTTCTCCT	8220
TTAGTACAGA ATAGAGGCTA CTGATAATCG CATACTCAGA ATCCGCATCA AGATTAGCAG	8280
TGGCTTCATC AAATATAAGA ATTTCAAGAT CTTTAAAGTA GGCTCTAGCT ATTTGAAGTC	8340

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TTTCGTTTCGC CCCCTGACA AGAGTCGTCC GCGTTCACCA ACTTCAGTAT CTAGTCCCTC	8400
TTTCATGGAG CGAATCTCAT CACCTAGTGA TACTAAGTCT AGCACTTTCA TCAATTCATC	8460
ATCAGTTACT AAGCGATTCA AACCGAGACA AAGATTGTCA CGAATACTGC CAGATAAGAC	8520
TGCATTATTT TGTGAAACCC AAGCGATTTT ACTTCTCCAT TCTTTTAAGT TAAATCATA	8580
TATACTTGAT TGCTCCATTA GAATATCTCC TGAAAGCGGT TTATAAAACC GCTCTAACAA	8640
ACGCACAATC GTTGATTTTC CTGATCCAGA TGGTCCAACA AAAGCAATTT TTTGCCCTT	8700
GAAAATTGAA CAAGTAATAT CCTTTAAGAC AGGTCGATTT TCATCATAAC CAAATAGAC	8760
ATGGTTAAAA TTCAACCCTC GTCCTGATAC CGATTTTCCT CCCTCAAATT TTTCTTAGG	8820
AACTGCAAGC AAGTTCTCCA GTGCAACTGA AGATCCCTTG CTCCTAGAAT AAACAGTTAC	8880
AAAATTAGCT ATATTACTAA TAGGATTAAG TAATTGAAAG AGGTAAATCA AAAACGAAAC	8940
CAAGGTTCCC ACAGATATAT ATCCTGCGCT GACCCGATAA CCCCATAGG TTAGCATCAC	9000
AGCTATAGTC GCAAAGATAA ATAAGAGAGC AAACGGGGTC TCAAAAGAAG TAACCCTATC	9060
TGATTTCACT GAATTGTTTT GTACCCCTTC AATACAATTA TCCAAAACAT CCTGTACACT	9120
TTTCTCTGCT TGGTTAGTCT TAATTAATTC ATGTTCTTGA ATCTTTTCAG TCAATTGCCC	9180
TGTTAAATTT CCTCCTGTAA ACGACGACTA TACTTTTCAC TGATATTGGA AAGGGGCAAG	9240
ATAATAAACA TCATACAAGG AAGAGTGATG AATAAAAGTA GAGAAAGATT CCAATCAAGA	9300
CTAAATAAGA CTACAATGGA ACCAAGTACC ATAACTAAAC TCAGAATAAT ATTTGGGAAA	9360
GTCGTAATTA AAAACTCACG AATGACACTC GTGTCAATGA CAATGGCAGA AGTCAACTCC	9420
CCACTTTGGC TCTTATCAAA GAAGGATTTT TCTACATAAA TCAACCCCTC TATCACTTTT	9480
TTCTTGATTT TTGCTATCTT TTTTTCACCC GATTGACTAA ACAGATAGTA ACCAATAGAA	9540
GAAAACAAGG CTTGACCAAT AAAAATCAAA AACGATTGAA ATACTTTGGA GCCTATATTT	9600
TCAATAGAAC TCCCATCTAT TAAATCCTTT AAGATAAGGG GAAGCAACAA AGCAAGTAGA	9660
CTAGACAGAA CAAGTAAGAA ACTCCCCATA ATCACCTTAG TATCTACTCT TAATAATTTT	9720
AATTTTCATAA ATACTCCTTA TAATATTTCA ACGGATAAAG TCGGGAATAA CTCAATTTGA	9780
GGATAAAATC TAATAAATCT TCCTATAACA AAACGCATAA CATCTAGGAT TTTATATACC	9840
TGATATTATG CGTTTTTAAG CACAAAGACT TCTTACACAA ACTTATCTAC AATTAGATTT	9900
TATTTGACAT GTTTTGCCAA TTCTTCTTGG GCTTTTTTAT TGGATTCTTC TTTTCTTTC	9960
AACCATTTTT CTCTGGCTTT TGCAATTCG TCTGTTGTGA CAATCTTATC TTGTACTTTG	10020
AGGTATTTAT ATGATTCAAC CCCTTTTGTA CCGGTTAAAC CATAGGCAGC AGCAAATGGT	10080

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ACGGTTCTTC TCAATGATGG TGTTCCTCCCA CGCGAAACAC TTGGAAGAAC TAAAGAACTA	10140
TCAATCAACC AAGCTTGAAT ATCAGCATAT TTCTCATAAC GTTTGGCCCG ATCTTGCTCT	10200
TTATTAGCTT CTTCCAACAT TTGAGTATAG ACATCCAGTC CAACTGCCTT AGCCTTGTC	10260
TTGGCCTCAC CAGGCTCTAG TCCAAGATTT TGCAGAAATC CTCCACTATT AGTATTAAAA	10320
ATATCGAGAT AGGTTGACGG GTCTTGATAA TCAGGTCCCC AACCGCCATG ATATAAAATCA	10380
TAATCTTTCT GAGCAGCTGT TTGAGCAAAG TAGCCTGAAC TGTCAAATC ATCTGATGTT	10440
AATTGCTGAA TGTCATCAC TACATTATCA GAACCTAAAA CAGATTCAAT TGATTGTTTG	10500
ATAGAACTAA CTCCTTGAT GCCTACTTTA TCTGTTACTT CCACAGTCTT ATCCAAGTGG	10560
ATTGGGAATT GAACACCCTT TGCTTCGAGT TCTTTCTTAG CTTCCGCAA CTTAGCCTTG	10620
GCTTTCTCAG GATTGTAGTA AGGGTCTTGA CCATCCGCAA AGTTGATACC TTGCCATTCC	10680
TTACCATAGT TGACCATCTT AGAGGCTACA ACTTCACCAA AGTCTTTTCC CTTGATACTG	10740
ACAAAGTTG GAGGAACCAC TAGGTTACGC AAAATCTTTG TTGCACCTTC TTTCCCTTCA	10800
GACTGAGCCC CATAAGATGT TCTGTCAAAA GCAAATTTGA TAGCCTGACG GAAGTTTSTA	10860
TTGAGAACTG CTTCTGAGT CGATTCTTT TCAATGTCAC TTGTTTSTA AGTATAATTG	10920
TAAGACTTCC TATCTAGGTT AAAATTAAAG AAATATGAAG TTGAATTTTG CATACTATAG	10980
ATGATATTGT TTTTGTATTT TTCTTTAATC CCTTCATAGC TGGAGCTGTT AGGAAAAAGA	11040
CGAGCCGTAG TATAAGCACC AGCTGTAAAA TTACGTTCCA GTGATTCTTG GTCGCTACCA	11100
TCATAGTAGG TCAATTTTAC ATCGTCTACA AAGACATTCT TAGCATCCCA GTAATTAGGG	11160
TTTTTCTTAT ATTCAATAGC AGATTTTGAG ACAAGTGCTT TCATCAAGAA AGGTCCATTG	11220
TACAAAATAC TAGATGGATC CGCCTTCCCA AAATCATCCC CTTTGTATTT CAGGAAATCT	11280
GCATTAACAG GAAAAAGTAT CGTTGCAAGT GTTTTGAAT TCCAGTAAAG TTCTGGTTTA	11340
ACCAAAGTAT ATTGAACCGT TTGGTCATCA AGTGCCTTGA CACCGACAGT TGAAAAGTCG	11400
CTTGTTTAC CAGTGATATA GTCATCCAAA CCAGCAACAG AGTCCTGCAC TAGATACAAG	11460
GCTTCTGATT TTTTATCAGC TGCATATTGC AAACCTGTCA CAAAATCCTG GGCAGTTACA	11520
GGCGCATATT CTTCTCCCTC AGAAGTAAAC CACTTGGCAT CTTACGAAG TTTGTAGGTA	11580
TAGGTCAAAC CGTCCTGAGA AACAGTCCAA TCCTCTGCTA ATGATGGAAT AATATTCCCA	11640
TATTGGTCAT TTTCTAATAA CCCGTCTACC AAATTGCAA CAATATCGGA TGTGCTGCG	11700
CGGTTTCTG CTAGATAGTT CAAGCTAGAT GGATCACTTG AATAAACATA GTTGTAGGTT	11760
TTTGACCCG TGCTAGAATT TCCACACGCG CTCAATAAAA CTCCTGTACC CAGGACAAGA	11820
CCTGCCAAGG TTAGATATTT GCTCTTAGAC TTTTTCATTT CCGG	11864

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(2) INFORMATION FOR SEQ ID NO: 62:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 2412 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 62:

TAAGTGCCT AAACATAATA TAAGGAGAGA AAATGCTCTGC AATAGAACGT ATTACAAAAG	60
CTGCTCACTT AATTGATATG AACGATATTA TCCGTGAAGG GAATCCTACT CTACGCGCGA	120
TTGCTGAGGA AGTCACTTTC CCCCTATCTG ACCAGGAAAT CATCCTAGGC GAAAAGATGA	180
TGCAATTCTT TAAACATTCC CAAGATCCTG TCATGGCTGA AAAAATGGGA CTCCGCGGTG	240
GTGTTGGACT GGCTGCTCCC CAGTTAGATA TCTCAAACG CATTATCGCT GTTTTGGTAC	300
CTAATATTGT TGAAGAAGGC GAAACTCCAC AGGAAGCCTA CGATTTGGA GCCATTATGT	360
ACAATCCAAA AATCGTCTCT CACTCTGTTC AAGATGCTGC TCTTGGCGAA GGAGAAGGTT	420
GCCTGTCTGT TGACCGTAAC GTGCCTGGCT ATGTTGTTTCG CCATGCCCCG GTTACTGTTG	480
ACTACTTTGA CAAAGATGGA GAAAAACACC GTATCAAAC CAAAGGCTAC AACTCCATTG	540
TTGTTAGCA TGAAATTGAC CACATTAACG GTATCATGTT TTACGATCGC ATCAATGAAA	600
AAGACCCATT TGCAGTTAAA GATGGTTTAC TGATTCTTGA ATAAAGAAAA TCCCGTTGCA	660
AGACGGGGTT TTGTGTTATA ATAGAGGCAT GAAAACAAAT GATATTGTCT ATGGTGTCCA	720
CGCCGTTACC GAAGCCCTCC TTGCAAATAC AGGAAACAAA CTCTACCTCC AAGAAGATCT	780
CCGAGGTAAG AATGTTGAGA AAGTCAAGGA ACTAGCTACA GAAAAGAAGG TGTCCATTTC	840
TTGGACATCA AAAAAATCTC TCTCTGAGAT TACTGAAGGT GCTGTTTCATC AAGGTTTGT	900
TCTACGAGTG TCTGAATTG CCTATAGCGA GCTAGATTAC ATCCTTGCAA AAACACGCCA	960
AGAAGAAAAT CCACTTCTAT TGATTCTAGA TGGTCTAACC GATCCCCATA ATCTGGGTTC	1020
TATCTTGCGA ACAGCCGATG CGACCAATGT TTCAGGTGTC ATCATTCCCA AGCACCCTAC	1080
TGTCGGAGTA ACTCCTGTCG TTGCCAAAAC AGCCACAGGT GCTATTGAAC ACGTtCCAAT	1140
TGCCCCGAGT ACCAACCTCA GTCAAACCTT AGGATAAACT TAAGGATGAA GGTTTCTGGA	1200
CCTTTGGAAC GGATATGAAC GGTACTCCTT GCCACAAGTG GAATACAAA GGGAAAATCG	1260
CCCTCATCAT TGGAATGAA GGAAAAGGTA TCTCTAGCAA CATCAAAAA CAGGTCGATG	1320
AAATGATTAC CATTCCGATG AATGGACATG TTCAAAGCCT TAATGCCAGT GTTGCTGCGG	1380

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CCATTCTCAT GTACGAAGTT TTCCGAAATA GACTATAAAA AAGTTTCCAG TCATCTGATT	1440
GGAAACTTTT TTATGATTAA CTATGTTCTG TAATGAATTT ATAGGCTTCT TGACCAGCGA	1500
TAGCTCCATC TCCAACCGCT GTTGTTACTT GGCGAAGGTC TTTCAAGCGA ACATCTCCAA	1560
CTGCAAAGAT ACCGTCGACT GCAGTTTCA TGTGGTTATC TGTCACAATC CATCCTGCCT	1620
GATCTTGGAT ATTCAATTCT TTAACAAAAT CGCTAAGAGG GTCCAAACCA ACATAGATAA	1680
AGACACCACC GAAGGCTTGT TCTGTCACCT GACCTGTTTT CACATTTTCA AATACGACTG	1740
ATTCTACTCG GTTTTCACCC TTGATTTCCC TTAACACAGA ATCCCAGATA AAGCTGATTT	1800
TTTCATTTCG AAAGGCGCGA TCTTGTAATA CCTTTTGGGC ACGAAGTTGG TCACGACGGT	1860
GAACAATGGT AACAGTCTTA GCAAAACGAG TCAAGAAGAG GGCTTCTTCA ACAGCTGAAT	1920
CTCCACCACC AACTACCAAT AAATCTTGGT CACGGAAGAA AGCACCATCA CACACAGCAC	1980
AGTAAGAAAC ACCACGACTG TTCAGTTCTT CTCTCCAGG CACTCCCAAA GGACGGTGGT	2040
TAGAACCAGT TGCTACGATA ACTGTACGTG TTTCATATGT TTGGTCATCA GTCATCACTT	2100
TCTTAAAATC ACCATGGCTT CGACATTTTC AACATAACCA TAAATGTGCT CAACACCAAG	2160
ATTTTCAAGT GGTCAAACA TCTTTTCAGC CAATTCAGGT CCACTAATAT TAGCGTATCC	2220
TGGGTAATTT TCGATATCAG ATGTATTATT CATCTGACCA CCTGGCAGAC CACCTTCAAT	2280
CAAAGCTACT TTTAGATTGC TTCGAGCAGC ATACAAGGCC GCAGTCATCC CTGCAGGTCC	2340
AGCACCGATA ATAATAGTAT CGTACATATA GATTCCTTCT TTCTTGGTGT AACTATCTTT	2400
ATTCTAACTC TG	2412

(2) INFORMATION FOR SEQ ID NO: 63:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 7760 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 63:

CCGATTTGGT GGAATTTTGG TCTCATCATT TAGAAGGTGT TGCAAGAGCA GAGTTTACCT	60
TGGTGCTTCA TACCAAATTG GGAGAAGCCT CTGTTTTGGC AAATATTGTA GATGTAAACA	120
AGGATGAATG GATTTTAGGA ACAGTTGCTG GTGCCAATAC CTTATTGGTT ATTTGTCGAG	180
ATCAGCACGT TGCCAAACTC ATGGAAGATC GTTTGCTAGA TTTGATGAAA GATAAGTAAG	240
GTCTTGGGAG TTGCTCTCAA GACTTATTTT TGAAAAGGAG AGACAGAAAA TGGCGATAGA	300
AAAGTTATCA CCCGGCATGC AACAGTATGT GGATATTAAA AAGCAATATC CAGATGCTTT	360

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TTTGCTCTTT CGGATGGGTG ATTTTATGA ATTATTTTAT GAGGATGCGG TCAATGCTGC	420
GCAGATTCTG GAAATTTCCT TAACGAGTCG CAACAAGAAT GCCGACAATC CGATCCCTAT	480
GGCGGGTGTT CCCTATCATT CTGCCCAACA GTATATCGAT GTCTTGATTG AGCAGGGTTA	540
TAAGGTGGCT ATCGCAGAGC AGATGGAAGA TCCTAAACAA GCAGTTGGGG TTGTTAAACG	600
AGAGTTGTT CAGGTCATTA CGCCAGGGAC AGTGGTCGAT AGCAGTAAGC CGGACAGTCA	660
GAATAATTTT TTGGTTTCCA TAGACCGCGA AGGCAATCAA TTTGGCCTAG CTTATATGGA	720
TTTGGTGACG GGTGACTTTT ATGTGACAGG TCTTTTGGAT TTCACGCTGG TTTGTGGGGA	780
AATCCGTAAC CTCAAGGCTC GAGAAAGTGGT GTTGGGTTAT GACTTGCTCTG AGGAAGAAGA	840
ACAAATCCTC AGCCGCCAGA TGAATCTGGT ACTCTCTTAT GAAAAAGAAA GCTTTGAAGA	900
CCTTCATTTA TTGGATTTGC GATTGGCAAC GGTGGAGCAA ACGGCATCTA GTAAGCTGCT	960
CCAGTATGTT CATCGGACTC AGATGAGGGA ATTGAACCAC CTCAAACCTG TTATCCGCTA	1020
CGAAATTAAG GATTTCCTGC AGATGGATTA TGCGACCAAG GCTAGTCTGG ATTGGTTGA	1080
GAATGCTCGC TCAGGTAAGA AACAAGGCAG TCTTTTCTGG CTTTGGATG AAACCAAAC	1140
GGCTATGGGG ATGCGTCTCT TCGCTTCTTG GATTCATCGC CCCTTGATTG ATAAGGAACG	1200
AATCGTCCAA CGTCAAGAAG TAGTGAGGT CTTTCTCGAC CATTTCTTTG AGCGTAGTGA	1260
CTTGACAGAC AGTCTCAAGG GTGTTTATGA CATTGAGCGC TTGGCTAGTC GTGTTTCTTT	1320
TGGCAAAACC AATCAAAGG ATCTCTTGCA GTTGGCGACT ACCTTGCTA GTGTGCCACG	1380
GATTCGTGCG ATTTTAGAAG GGATGGAGCA ACCTACTCTA GCCTATCTCA TCGCACAACT	1440
GGATGCAATC CCTGAGTTGG AGAGTTTGAT TAGCGCAGCG ATTGCTCCTG AAGCTCCTCA	1500
TGTGATTACA GATGGGGGAA TTATCCGGAC TGGATTTGAT GAGACTTAG ACAAGTATCG	1560
TTGCGTTCTC AGAGAAGGGA CTAGCTGGAT TGCTGAGATT GAGGCTAAG AGCGAGAAAA	1620
CTCTGGTATC AGCACGCTCA AGATTGACTA CAATAAAAAG GATGGCTACT ATTTTCATGT	1680
GACCAATTCG CAACTAGGAA ATGTGCCAGC TCACTTTTTC CGCAAGGCGA CGCTGAAAAA	1740
CTCAGAACGC TTTGGAACCG AAGAATTAGC CCGTATCGAG GGAGATATGC TTGAGGCGCG	1800
TGAGAAGTCA GCCAACCTCG AATACGAAAT ATTTATGCGC ATTCGTGAAG AGGTCGGCAA	1860
GTACATCCAG CGTTTACAAG CTCTAGCCCA AGGAATTGCG ACGGTTGATG TCTTACAGAG	1920
TCTGGCGGTT GTGGCTGAAA CCCAGCATTT GATTGACCT GAGTTTGGTG ACGATTACA	1980
AATTGATATC CGGAAAGGGC GCCATGCTGT CGTTGAAAAG GTTATGGGG CTCAGACCTA	2040
TATTCCAAAT ACGATTGAGA TGGCAGAAGA TACCAGTATT CAACTGGTTA CAGGGCCAAA	2100

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CATGAGTGGG AAGTCTACCT ATATGCGTCA GTTAGCCATG ACGGCGGTTA TGGCCCAGCT	2160
GGGTTTCCTAT GTTCCTGCTG AAAGCGCCCA TTTACCGATT TTTGATGCGA TTTTACCCG	2220
TATCGGAGCA GCAGATGACT TGGTTTCGGG TCAGTCAACC TTTATGGTGG AGATGATGGA	2280
GGCCAATAAT GCCATTTTCGC ATGCGACCAA GAACTCTCTC ATTCTCTTTG ATGAATTGGG	2340
ACGTGGAAC T GCAACTTATG ACGGGATGGC TCTTGCTCAG TCCATCATCG AATATATCCA	2400
TGAGCACATC GGAGCTAAGA CCCTCTTTGC GACCCACTAC CATGAGTTGA CTAGTCTGGA	2460
GTCTAGTTTA CAACACTTGG TCAATGTCCA CGTGCGAACT TTGGAGCAGG ATGGGCAGGT	2520
CACCTTCCTT CACAAGATTG AACCGGGACC AGCTGATAAA TCtACGGTAT CCATGTTGCC	2580
AAGATTGCTG GCTTGCCAGC AGACCTTTTA GCAAGGGCGG ATAAGATTTT GACTCAGCTA	2640
GAGAATCAAG GAACAGAGAG TCCTCCTCCC ATGAGACAAA CTAGTGCTGT CACTGAACAG	2700
ATTTCACTCT TTGATAGGGC AGAAGAGCAT CCTATCCTAG CAGAATTAGC TAAACTGGAT	2760
GTGTATAATA TGACACCTAT GCAGGTTATG AATGTCTTAG TAGAGTTAAA ACAGAACTA	2820
TAAAACCAAG ACTCACTAGT TAATCTAGCT GTATCAAGGA GACTTCTTTG ACAATTCTCC	2880
ACTTTTTTGC TAGAATAACA TCACACAAAC AGAATGAAAA GGAGCTGACG CATTGTCGCT	2940
CCCTTTTGTC TATTTTTTAA GGAGAAAGTA TGCTGATTCA GAAAATAAAA ACCTACAAGT	3000
GGCAGGCCCT GGCTTCGCTC CTGATGACAG GCTTGATGGT TGCTAGTTCA CTTCTGCAAC	3060
CGCGTTATCT GCAGGAAGTC TTAGGCGCCC TCCTTACTGG GAAATATGAA GCTATTTATA	3120
GTATCGGGGC TTGGTTGATT GGTGTGGCCG TAGTCGGTCT AGTTGCTGGT GGACTCAATG	3180
TTGTCTCGC AGCCTATATT GCCCAAGGAG TTTCAATCCG CCTTCGGGAG GATGCCTTCC	3240
GTAAAATTCA AACCTTTTCT TATGCTGATA TTGAACAATT TAATGCGGGA AATCTAGTCG	3300
TTCGAATGAC AAATGATATC AACCAGATTG AGAACGTTGT CATGATGACC TTCCAAATTC	3360
TTTTCAGACT TCCCCTCTTG TTCATCGGTT CGTTTATCCT AGCGGTTCAA ACCTTACCTT	3420
CTCTGTGGTG GGTGATTGTT CTCATGGTAG TCTTGATTTT TGGTTTGACT GCTGTCATGA	3480
TGGGAATGAT GGGGCCTCGT TTTGCCAAGT TTCAAACCCT TCTTGAGCGC ATCAATGCCA	3540
TTGCCAAGGA AAATTTACGT GGCCTTCGTG TGGTCAAGTC CTTTGTCCAA GAAAAAGAGC	3600
AATTTGCTAA GTTTACAGAG GTCTCAGACG AGCTTCTTGG TCAAAACCTT TACATTGGTT	3660
ATGCCTTTTC AGTAGTGGAA CCCTTTATGA TGTGTTGG TTACGGGGCG GTCTTCCTCT	3720
CTATTTGGCT GGTGCGGGGA ATGGTTCAGT CGGATCCGTC TGTGTTGGT TCCATCGCTT	3780
CTTTTGTTAA TTACCTAAGC CAGATTATCT TTACCATTGT TATGGTTGGA TTTTGGGAA	3840
ATTCTGTGAG CCGTGCCATG ATTTCCATGC GTCGTATTG AGAAATTCTT GACGCAGAGC	3900

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CAGCTATGAC CTTCAAGGAT ATCCCAGATG AAGAGTTGGT TGGAAGTCTT AGCTTTGAAA	3960
ATGTGACCTT TACCTATCCA ATGGACAAGG AACCGATGCT GAAAGATGTG AGCTTTACTA	4020
TTGAACCTGG TCAAATGGTT GGTGTAGTTG GAGCGACTGG TGCAGGAAAG TCAACCTTGG	4080
CTCAATTGAT TCCACGTCTC TTTGATCCAC AGGACGGGGC CATTAATAATC GGTGGCAAGG	4140
ATATTCGAGA AGTGAGTGAA GGAACCTGC GTAAACAGT TTCCATCGTT CTCCAACGTG	4200
CCATTCTTTT TAGTGGAACG ATTGCAGATA ACTTGAGACA GGGGAAGGGG AATGCTACTC	4260
TATTTGAAAT GGAGCGCGCA GCCAATATTG CCCAGGCTAG TGAATTCATT CATCGTATGG	4320
AGAAAACCTT TGAAAGTCCA GTTGAAGAAC GGGGAACCAA TTTCTCTGGT GGACAAAAAC	4380
AAAGGATGTC GATTGCGCGT GGGATTGTCA GCAATCCACG TATTCTGATT TTTGATGATT	4440
CGACCTCAGC CTTGGATGCC AAATCAGAGC GCTTGGTGCA AGAAGCTTTG AATAAGGACT	4500
TGAAGGGGAC GACAACCATT ATTATTGCTC AAAAAATTAG CTCGGTTGTC CATGCAGACA	4560
AGATCTTGGT TCTAAATCAA GGACGATTGA TTGGTCAAGG TACGCATGCA GACTTGGTTG	4620
CCAACAATGC CGTTTACCGT GAAATCTATG AACACAGAA ATGAAAGACA AACTATAAGA	4680
AAAGTCAATA GTTTTATCTA AACTATTTCT TATTTCAATT TGATGATTTG GCGATGATTT	4740
TAGAGCACGG CAAAAAGCCC TTGAAAAAGT CCATTTTTC AAAGGTAATC CTGTGTTAAT	4800
TTCAGAAATT ACATCACTTT TTGTTCTGCA AATGGCAGCT CTTTTTTTAG GATATAAAAC	4860
AGGGTTCGGA TAAGTTTTTT TGCAAGGTGG ATGATGGCTA CATTGTAATG TTTTCCTTGT	4920
TCTAATTTAG TCTTAAGATA GGCCTTAAAA GCAGGCGAAA AGCGAGGGCA TGCTTTGGCA	4980
GCTTGTATGA GTACCTACCG CAGATGAGGG GAACTCCGTT TGACCATCTC TCCTGCTAAA	5040
TCAATCTGAT CTGACTGATA AATAGAAGAA TCCAGTCCAG CGAAAGCTTG TAATTGAGCA	5100
GGATTATCAA AGGCATGAAT ATTTCAATC TCAGCTAAAA TGACCGCCCC TAAACGATCC	5160
CCAATCCCAG TAACCGTCGT GATGACCGAG TTGAACTCAG CCATCAAGTC ATTGACACAT	5220
GTTTCCGCCCT TGTCAATGAG CCTCTGTAA TGTTTGATGT TTTCAATACA CGAGATAAAA	5280
CGTCTATGCG TTATCAAACCT CATTACCAAT TAAAACAAAA AGCTGTGGTT AGATCCTTTC	5340
GGAAATTGTC AAGCGATTGG AGGAAATGAA CTAATCCACA GCGGCTTATT CCAAGTATAC	5400
CACTTGGGCT TTGGCAGTAG CTAAGTGGC TAAATATAAT ATAAGGAGGA GTAAATGAA	5460
GACAGTTCAA TTTTTTTGGC ATTATTTTAA GGTCTACAAG TTCTCATTTG TAGTTGTCAT	5520
CCTGATGATT GTTCTGGCGA CTTTGGCCCA AGCCCTCTTT CCAGTCTTTT CTGGACAAGC	5580
GGTGACGCAG CTAGCCAATT TAGTTCAAGC TTATCAAAAT GGCAATCCAG AACTTGTATG	5640

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TTGTAGATTC GCAGAGATCA TTCGTCAAGT CGGTGGTCTC CCTTTAGTCA TTCCTGTTGG	7500
TGATGAGTCA GTTGTACGTG ATTATGTGGA AATGATTGAC AAACCTCATTT TGACAGGAGG	7560
CCAAAATGTT CATCCTCAGT TTTATGGAGA GAAAAAGACC GTCGAGAGCG ATGATTACAA	7620
TCTGGTCCGT GACGAATTTG AATTGGCACT CTTGAAGGAA GCGCTTCGTC AGAATAAACC	7680
AATTATGGCA ATCTGTGCGG GTGTCCAAC TGTCAATGTT GCCTTTGGTG GAACCCTCAA	7740
TCAAGAAATC GAAGGTCAGG	7760

(2) INFORMATION FOR SEQ ID NO: 64:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2723 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 64:

GAGGTTTTAA TTCACCTACC TCTSCCGTAT CTTATTAA AATGAATTCT TTTACGGTGG	60
TATTTCTTGC AAAATCTTTT ACAACAATCT TAATGTTTAG TGTCTTGTCT ATTATTTGTT	120
TAATATCATT AAATGATGTA TATTTCTTTC CATTATATA AATATGTTGT TCTGAATCT	180
CACCATCGAA TCCATTATTT CTTTTATCAT TGATGTTAAA GACTACAGAT TTTCCATCAG	240
CATATTCGAT ACTAGTATTT CCCTTAGGAT CAATGTTTAC TTCGGGTTTA ACATTATCAT	300
ATAAAACTG ATAGTGGACT CCAACTGCTT TAGCATTCAG ATCGCTATAG CCAGTTTGAA	360
GATAAACATT TCCATCCATA TCTGTACCT TATCTGGAAA TCCGTTTGCT TTATAGCTTT	420
TCATTCCTCA GTCCATGATG TCACCGTCTT TAACATTCAG CTTAATATTA AAATCTCTAG	480
TGTTATCAAT GTGTAAATCT CCGTAGATTA AATAATTATC TACAACCGAT TCATTAATCTC	540
TCAATTCCCA GTTAAACCA CCCTATCAG AAATCTTACC TCTTAAATAA AATTCTGGAT	600
TTCTGACATA AATTTTATTA GATTTAGATG GATTAAAGTA GTTCTTATCC ATTGAAAGGT	660
TTACTGGTTT GGTATCAATA AATAACATGG AGCCATCTTC TTTTATAGCT TCTACATGA	720
ACTTATCCTC TCCAGTGTAT TCTTTATCAT CCTTACCAA TAATACAAGT TTAGAAGAAT	780
CTGTCACAAG ATTTCCGTCT TTATCGATAG CTTCCCCTTT ATCGTTCATT TTAAATGTAA	840
ACACTTGATA CCTTATAATG TTAAAGCCGT CCAAAGCCGA CATTAATACA GATTGGGTAC	900
TTCTTCCATC TTCAACATTT CTAATATCAG CATAAATTGT TGTTTCTGAA AGGGCTCTTA	960
GATTAGGATT GGCCTTTTGT ATTTTGTGTA TATCTTCCTT GCTATAGACT CCATTTCTCT	1020

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CTAACATATC CGTTTTTCCA GGATTATAGG TAGTCAC'TTT TAGTGCATAG CCTTTTCTTA	1080	
GAATGATATT ATCCTTTAAC AGATATTGTT GTTTTCTGA ATCAGAATAG ATTTTACCAG	1140	
ATTCCATTTT AGTTAAATTG TCTGGTTTGT TTTTGAAG ATCTCCTTCC CCTAATTCTA	1200	
TGACATTTCC ATAACCTGAT ACATAGGGAT ATTCTGATTT AGTTTCCTTA ATTTTTCAG	1260	
GCATTCTAAT TTTAATTTCA GCTTTTTTCT GATCATTATC TTAAACAAAT AATCTCATAT	1320	
CTCCTGCAAA AGCTAATCCA TCCACAATAT CATTAATATT AGCGTATAGA TCAAATGTCA	1380	
TCGTTTTTGA GTGGAAATCA TACTTGGTCG CTTTGATTTT TATAGATTTA TAGTTATTCC	1440	
CATAATATAC CTTGGCATT TTAGAAACAT TACTTATCTT TCCAAGAAAT TCAAAGTGTC	1500	
CATCTTTAGA CGGACTTAGA ACACCATAAA TTTTGTATT GATTTCGTCA AGTTTCTCAG	1560	
TTTCATATTC TAGATCAGTC CCATCATCGT AGGCTATTAT ATTTCTTTA TCATCGTATT	1620	
TATAATCGTA TTCCTCCATT CTCTTACCAG TTTCACTTGT AAAATCATCA ACTTCTCTAA	1680	
ATTTCTTTTT AATGAGTTTC TTTAAGCTT TATTTTCAA GTCTCTAATT GTTGAAATAT	1740	
TTCTATCAAT AGTAAACTA GATTTTCTT TAATAGACTC TTCATTTTCT TGATGATGAT	1800	
GTTCTACCCC AGTTGTATCT TTTTTTAGAC TACCCTCTT TCCATTTCT AAATTTTAA	1860	
ATTTAGATTC TGCAATCTCG CCAAGCTTT GATATTTAGA TGAATCTTGA TCAGGATCTA	1920	
CTAGATAATA GGAAATCATC CCCTTTTCAT CAGCCTGATT AGCAAATTTA ATTCTATGAA	1980	
TCTTTGTGAA ATTGCTAGAA CCATCTAATG CAATGACTTC AATGATTTT CCCCTTAAAT	2040	
CTCCCGCACC TTTAATTTCA TAAATGGTAT TTCCGTCTT ATCAAGTTT CTATTTCTTC	2100	
CTTGACCCCTC ACCTGCGTAA GTTACTTCAA GATTTTTTTC AACCTCTCCA TCTTCATTAA	2160	
CAAGAGCGGC GCCAGCATAC CAAACTTCGT TCGCAATCTC GTCAAATTT TCAGGATGTT	2220	
CTTTTGTATC TCTCGCAAAT AGCGTTTCAT TCTTATACTG ATCTTTTACC TTATGATAAG	2280	
TATCCTTTGT AATCAACTTA ATTTTTCAG GATTTGAAAA ATCAACCGAA ACAATCTTAG	2340	
GGGCGGTGTT ATCAATTTT ACAGGAATAT AGGAAACCTG CCATGGGTAA TCTTTAGTTA	2400	
ATCTATATTT AAATTTATAG AAATATTGAC CTTCCGCAAT CGGTTCAAAT TGACCTCTTA	2460	
TCTTAGTAGC AGGATCTTGA TTATCCTTAC TTTCTGGTGC ATTTTCTTCT CTACCTCTAG	2520	
GATTATAGAT GAGTCCATCC CACTTCAAGT CACCCCAAAC TTTTAGTTTA GATGATTTGA	2580	
TTCCCTTGC ATCATTGCTT TTAGAATTTA AAATCCTCT AATAAAGTGT TCTCTCGAAA	2640	
TGACTTTTAA GTCTCTTGA TTTCTCCCT CTTTATTGT ATTTACTATT GAAATCAATC	2700	
CTTCTCTGC ACTTCTAAT ACA	2723	

(2) INFORMATION FOR SEQ ID NO: 65:

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- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 11831 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 65:

AAAAAAGTGG GAATGACTCA AATCTTCACT GAAGCTGGCG AATTGATCCC TGTAACAGTT	60
ATTGAAGCAA CTCCAAACGT TGTTCTTCAA GTTAAAACTG TTGAAACAGA CGGATACAAC	120
GCTATCCAAG TTGGTTTCGA TGACAAACGC GAAGTATTGA GCAACAAACC TGCTAAAGGA	180
CATGTAGCGA AAGCTAACAC GGCTCCTAAG CGCTTCATTC GTGAATTCAA AAACGTTGAA	240
GGCTTGGAAG TTGGTGCTGA AATTACAGTT GAAACATTCG CAGCTGGAGA CGTTGTTGAC	300
GTAACGGGTA CTTCTAAAGG TAAAGGTTTC CAAGGTGTTA TCAAACGCCA CGGACAATCA	360
CGTGGACCAA TGGCTCACGG TTCTCGTTAC CACCGTCGTC CAGGTTCTAT GGGGCCTGTT	420
GCACCTAACC GCGTATTCAA AGGTAAAAAC CTTGCAGGAC GTATGGGTGG CGACCGCGTA	480
ACAATTCAAA ACCTTGAAGT TGTACAAGTT GTTCAGAAA AGAACGTTAT CCTTATCAAA	540
GGTAACGTAC CAGGTGCTAA GAAATCTCTT ATCACTATCA AATCAGCAGT TAAAGCTGGT	600
AAATAATAAA GAAAGGGGAA ATCAGTCACA ATGGCAAACG TAACATTATT TGACCAAAC	660
GGTAAAGAAG CTGGCCAAGT TGTCTTAGC GATGCAGTAT TTGGTATCGA ACCAAATGAA	720
TCAGTTGTGT TTGATGTAAT CATCAGCCAA CGCGCAAGCC TTCGTCAAGG AACACACGCT	780
GTTAAAAACC GCTCTGCAGT ATCAGGTGGT GGACGCAAAC CATGGCGTCA AAAAGGAACT	840
GGACGTGCTC GTCAAGGTTT TATCCGCTCA CCACAATGGC GTGGTGGTGG TGTGTCTTC	900
GGACCAACTC CACGTTTATA CGGCTACAAA CTTCCACAAA AAGTTCGTCG CCTAGCTCTT	960
AAATCAGTTT ACTCTGAAAA AGTTGCTGAA AACAAATTCG TAGCTGTAGA CGCTCTTTCA	1020
TTTACAGCTC CAAAACTGC TGAATTTGCA AAAGTTCTTG CAGCATTGAG CATCGATTCT	1080
AAAGTTCTTG TTATCCTTGA AGAAGGAAAT GAATTCGCAG CTCTTTCAGC TCGTAACCTT	1140
CCAAACGTGA AAGTTGCAAC TGCTACAAC	1200
GCAAGTGTTT TTGACATCGC AAATAGCGAC	1260
AAACTTCTTG TCACACAAGC AGCTATCTCT AAAATCGAGG AGGTTCTTGC ATAATGAATT	1320
TGTATGATGT TATCAAAAAA CCTGTCTATCA CTGAAAGCTC AATGGCTCAA CTTGAAGCAG	1380
GAAAAATATGT ATTTGAAGTT GACACTCGTG CACACAACT TTTGATCAAG CAAGCTGTTG	1440
AAGCTGCTTT CGAAGGTGTT AAAGTTGCCA ATGTTAACAC AATCAACGTA AAACCAAAAG	

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CTAAACGTGT TGGACGTTAC ACTGGTTTTA CTAACAAAAC TAAAAAAGCT ATCATCACAC	1500	
TTACAGCTGA TTCTAAAGCA ATCGAGTTGT TTGCTGCTGA AGCTGAATAA TCTAAGGAGG	1560	
AAATATCGTG GGAATTCGTG TTTATAAACC AACAACAAAC GGTCGCCGTA ATATGACTTC	1620	
TTTGGATTTC GCTGAAATCA CAACAAGCAC TCCTGAAAAA TCATTGCTTG TTGCATTGAA	1680	
GAGCAAGGCT GGTCGTAACA ACAACGGTCG TATCACAGTT CGTCACCAAG GTGGTGGACA	1740	
CAAACGTTTC TACCGTTTGG TTGACTTCAA ACGTAATAAA GACAACGTTG AAGCAGTTGT	1800	
TAAAAAATC GAGTACGATC CAAACGTTTC TGCAACATC GCTCTGTGAC ACTACACTGA	1860	
CGGTGTGAAA GCATACATCA TCGCTCCAAA AGGTCTTGAA GTAGGTCAAC GTATCGTTTC	1920	
AGGTCCAGAA GCAGATATCA AAGTCGGAAA CGCTCTTCCA CTTGCTAACA TCCCAGTTGG	1980	
TACTTTGATT CACAACATCG AGTTGAAACC AGGTCGTGGT GGTGAATTGG TACGTGCTGC	2040	
TGGTGCATCT GCTCAAGTAT TGGGTCTGA AGGTAAATAT GTTCTGTTC GTCTTCAATC	2100	
AGGTGAAGTT CGTATGATTC TTGGAACCTG CCGTGCTACA GTTGGTGTG TCGGAAACGA	2160	
ACAACATGGA CTGTAAACC TTGGTAAAGC AGGACGTAGC CGTTGGAAG GTATCCGCCC	2220	
AACAGTTCGT GGTCTGTAA TGAACCCTAA CGATCACCCA CACGGTGGTG GTGAAGGTAA	2280	
AGCACCAGTT GGTCGTAAAG CACCATCTAC TCCATGGGGC AAACCTGCTC TTGGTCTTAA	2340	
AACTCGTAAC AAGAAAGCGA AATCTGACAA ACTTATCGTT CGTCGTCGCA ACGAGAAATA	2400	
ATATTAAACT AGTCGCTTAA GCAACTAGTA AATCCGCCAG CTCGGTAGCG CTCCATAGGA	2460	
GTGCAAGCCG CTGTGGTACA ACATTTAAAG GAGAAAATAT AAAAATGGGA CGCAGTCTTA	2520	
AAAAAGGACC TTTCGTCGAT GAGCATTTGA TGAAAAAAGT TGAAGCTCAA GCTAACGACG	2580	
AAAAGAAAAA AGTTATTAAA ACTTGGTCAC GTCGTTCAC GATCTTCCCA AGTTTCATTG	2640	
GTTACACTAT TGCAGTTTAT GACGGACGTA AACACGTACC TGTTTACATC CAAGAAGACA	2700	
TGGTAGGCCA CAACTTGGT GAATTTGCAC CAACTCGTAC TTACAAAGGT CACGCTGCAG	2760	
ACGACAAGAA AACACGTAGA AAATAAGGAG AACATAAATG GCAGAAATTA CTTAGCTAA	2820	
AGCAATGGCT CGTACAGTAC GTGTTTCACC TCGTAAATCA CGTCTTGTTT TTGATAACAT	2880	
CCGTGGTAAA AGCGTAGCCG ATGCAATCGC AATCTTGACA TTCACTCCAA ACAAAGCTGC	2940	
TGAAATCATC TTGAAAGTTT TGAACCTAGC TGAGCTAAC GCTGAAAACA ACTTTGGTTT	3000	
GGATAAAGCT AACTTGGTAG TATCTGAAGC ATTCGCAAAC GAAGGACCAA CTATGAAACG	3060	
TTTCCGTCCA CGTGCGAAAG GTTCAGCTTC ACCAATCAAC AAACGTACAG CTCACATCAC	3120	
TGTAGCTGTT GCAGAAAAAT AAGGAGGTAA AATCGTGGGT CAAAAAGTAC ATCCAATTGG	3180	
TATGCGTGTC GGCATCATCC GTGATTGGGA TGCCAAATGG TATGCTGAAA AAGAATACGC	3240	

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GGATTACCTT CATGAAGATC TTGCAATCCG TAAATTCGTT CAAAAAGAAC TTGCTGACGC	3300
AGCAGTTTCA ACTATTGAAA TCGAACGCGC AGTAAACAAA GTTAACGTTT CACTTCACAC	3360
TGCTAAACCA GGTATGGTTA TCGGTAAAGG TGGTGCTAAC GTTGATGCaC TCCGTGCAAA	3420
ACTTAACAAA TTGACTGGAA AACAAGTACA CATCAACATC ATCGAAATCA AACAACTGA	3480
TTTGATGCT CACCTTGTAG GTGAAGGAAT TGCTCGTCAA TTGGAGCAAC GTGTTGCTTT	3540
CCGTCGTGCA CAAAAACAAG CAATCCAACG TGCAATGCGT GCTGGAGCTA AAGGAATCAA	3600
AACTCAAGTA TCAGGTCGTT TGAACGGTGC AGATATCGCC CGTGCTGAAG GATACTCTGA	3660
AGGAACGTT CCGCTTCACA CACTTCGTGC AGATATCGAT TACGCTTGGG AAGAAGCAGA	3720
TACTACATAC GGTAAACTTG GTGTTAAAGT ATGGATCTAC CGTGGTGAAG TTCTTCCAGC	3780
TCGTAAAAAC ACTAAAGGAG GTAAATAACC AATGTTAGTA CCTAAACGTG TTAAACACCG	3840
TCGTGAGTTC CGTGGAAAAA TGCGCGGTGA AGCAAAAGGT GGAAAAGAAG TAGCATTCGG	3900
TGAATACGGT CTTCAAGCTA CAACTAGCCA CTGGATCACT AACCGCCAAA TCGAAGCTGC	3960
TCGTATCGCC ATGACTCGTT ACATGAAACG TGGTGGTAAA GTTTGGATTA AAATCTTCCC	4020
ACACAAATCA TACACTGCTA AAGCTATCGG TGTGCGTATG GGATCTGGTA AAGGGGCACC	4080
TGAAGGTTGG GTAGCACCAG TTAAACGTGG TAAAGTGATG TTCGAAATCG CTGGTGTATC	4140
TGAAGAGATT GCACGTGAAG CGCTTCGACT TGCTAGCCAC AAATTGCCAG TTAAATGTAA	4200
ATTCGTAAAA CGTGAAGCAG AATAAGGAGA AGGCATGAAA CTTAATGAAG TAAAAGAATT	4260
TGTTAAAGAA CTTCTGGTTC TTTCTCAAGA AGAACTCGCG AAGCGCGAAA ACGAATTGAA	4320
AAAAGAATTG TTTGAACTTC GTTTCCAAGC TGCTACTGGT CAATTGGAAC AAACAGCTCG	4380
CTTGAAAGAA GTTAAAAAAC AAATCGCTCG CATCAAAACA GTTCAATCTG AAGCGAAATA	4440
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TGTTGTATCT GACAAAATGG ACAAGACAAT CACAGTTGTA GTTGAAACAA AACGTAACCA	4560
CCCAGTCTAT GGTAAACGTA TTAACACTC TAAAAAATAC AAAGCTCATG ATGAAAACAA	4620
TGTTGCCAAA GAAGGCGATA TCGTACGTAT CATGGAAACT CGCCCGCTTT CAGCTACAAA	4680
ACGTTTCCGT CTGTAGAAG TTGTTGAAGA AGCGGTCATC ATCTAATCAA ACCTGAAAGG	4740
AGAAAACTGA AATGATTCOA ACAGAACTC GTTTGAAAGT CGCAGACAAC AGCGGTGCTC	4800
GCGAAATCTT GACTATCAAA GTTCTTGGTG GTTCAGGACG TAAATTGCA AACATCGGTG	4860
ATGTTATCGT GGCATCTGTA AAACAAGCTA CTCCTGGTGG TGCGGTAAAA AAAGGTGACG	4920
TTGTTAAAGC AGTTATCGTT CGTACTAAAT CAGGTGCTCG TCGTGCTGAT GGTTCATACA	4980

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TCAAATTTGA	CGAAAACGCA	GCAGTTATCA	TCCGTGAAGA	CAAACTCCT	CGCGAACAC	5040
GTATCTTTGG	CCCAGTTGCA	CGTGAATTGC	GTGAAGGTGG	CTTCATGAAG	ATCGTGTCAC	5100
TTGCTCCAGA	AGTACTTTAA	TTTTTAGGAA	CAAACTAGTC	CCCTAGCTTC	AAGCTAGGGT	5160
GCCCTTATGG	GCGTAAGAAA	AATCAAGGAG	AAACCTAATG	TTTGTAAGAA	AAGGCGACAA	5220
AGTTCGCGTA	ATCGCTGGTA	AAGATAAGGG	AACAGAAGCT	GTGTGCTTCA	CTGCCCTTCC	5280
AAAAGTAAAC	AAAGTTATCG	TTGAAGGTGT	TAACATTGTT	AAGAAACACC	AACGTCCAAC	5340
TAACGAGCTT	CCTCAAGGTG	GTATCATCGA	GAAAGAAGCA	GCTATCCACG	TATCAAACGT	5400
TCAAGTTTGG	GACAAAAATG	GTGTAGCTGG	TCGTGTTGGA	TACAAATTTG	TAGACGGTAA	5460
AAAAGTTCGC	TACAACAAAA	AATCAGGCGA	AGTGCTTGAT	TAATCACGAA	GGAAAGGAGA	5520
AGTATAATGG	CAAATCGTTT	AAAAGAAAAA	TATCTTAATG	AAGTAGTTCC	TGCTTTGACA	5580
GAACAATTCA	ACTACTCATC	AGTGATGGCT	GTGCCTAAAG	TAGATAAGAT	TGTTTTGAAC	5640
ATGGGTGTTG	GTGAAGCTGT	ATCAAACGCT	AAAAGCCTTG	AAAAAGCTGC	TGAAGAATTG	5700
GCACTTATCT	CAGGTCAAAA	ACCACTTATC	ACTAAAGCTA	AAAAATCAAT	CGCCGGCTTC	5760
CGTCTTCGTG	AAGGTGTTGC	GATCGGTGCA	AAAGTTACCC	TTCGTGGTGA	ACGTATGTAC	5820
GAATTCTTGG	ATAAATTGGT	ATCAGTTTCA	CTCCACGTG	TACGTGACTT	CCACGGTGTC	5880
CCAACAAAAT	CATTTGATGG	ACGCGGGAAC	TACACACTTG	GTGTGAAAGA	ACAATTAATC	5940
TTCCCAAGAA	TCAACTTCGA	TGACGTTGAC	AAAACCTCGT	GTCTTGACAT	CGTTATCGTA	6000
ACAACGCTA	ACACTGACGA	AGAGTCACGT	GCATTGCTTA	CAGGCCTTGG	AATGCCTTTT	6060
GCAAAATAAT	ATAGGAGGTA	AATCTAATGG	CTAAAAATC	AATGGTAGCT	AGAGAGGCTA	6120
AACGCCAAAA	AATTGTTGAC	CGTTATGCTG	AAAAACGTGC	TGCATTAAAG	GCGGCAGGGG	6180
ACTACGAAGG	TTTATCTAAA	TTACCTCGCA	ACGCCTCACC	GACTCGTTTA	CATAATCGTT	6240
GTAGGGTTAC	GGGGCGCCCA	CATTCAAGTTT	ACCGCAAATT	TGGTCTGAGT	CGTATCGCTT	6300
TTGCGGAACT	TGCGCATAAA	GGTCAAATTC	CTGGTGTAAC	AAAAGCATCT	TGGTAATTTA	6360
AGATATCAAG	AGCGTCAAAA	CTCCAAGTAA	AAATAGGAAA	CTTGACGAAG	AACTAAAGT	6420
TTCTAGGAAA	GTTTATCTTT	TTCACACAGA	GTTTAGCCCG	GGTTCAATTG	GGCTTGCCAA	6480
TTTGAACACG	AGCTACAGCT	TTGGCAAAAA	AGACCAATTT	GCTTTGGAGC	ATTGCTTCTG	6540
CATTAAATTG	TCTATTTTGG	CTCGTGCTGT	TACGCTCTTT	GTATCATGTA	TAACTAGCA	6600
AGTGCAACTT	GCAAACTACT	AGTAAGAGGA	GAAAAACAAA	ATGGTTATGA	CTGACCCAAT	6660
CGCAGACTTC	CTAACTCGTA	TTCGTAATGC	TAACCAAGCT	AAACACGAAG	TACTTGAAGT	6720
ACCTGCATCA	AACATCAAAA	AAGGGATTGC	TGAAATCCTT	AAACGCGAAG	GTTTTGTAAA	6780

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AAACGTTGAA ATCATTGAAG ATGACAAACA AGGCGTCATC CGTGTATTTT TTAATACGG	6840
ACCAAATGGT GAGAAAGTTA TCACTAACTT GAAACGTGTT TCTAAACCAG GACTTCGTGT	6900
CTACAAAAA CGTGAAGACC TTCCAAAAGT TCTTAACGGA CTTGGAATTG CCATCCTTTC	6960
AACCTCTGAA GGTTCGCTTA CTGATAAAGA AGCACGCCAA AAGAATGTTG GTGGTGAGGT	7020
TATCGCTTAC GTTTGGTAAA ATCAAGATAC AAAGCTCGTA AAGAACAAAG CAAAATTAGG	7080
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GTGTTCAAGT CAGCTCTTGA ACTAAATAAG TATCTGAACC CCGTGAAAAC TGGCCGTCT	7200
GGCCTGACAA TTAAACAGGA GAAAATAAAC ATGTCACGTA TTGGTAATAA AGTTATCGTG	7260
TTGCCTGCTG GTGTGAACT CGCTAACAAT GACAACGTTG TAACTGTAAA AGGATCTAAA	7320
GGAGAACTTA CTCGTGAGTT CTCAAAAGAT ATTGAAATCC GTGTGGAAGG TACTGAAATA	7380
ACTCTTCACC GTCCAAACGA TTCAAAAGAA ATGAAAATA TCCACGGAAC TACTCGTGCC	7440
CTTTTGAACA ACATGGTTGT TGGTGTATCA GAAGGATTCA AGAAAGAACT TGAAATGCGT	7500
GGGGTTGGTT ACCGTGCACA GCTTCAAGGA TCTAACTTG TTTTGGCTGT TGGTAAATCT	7560
CATCCAGACG AAGTTGAAGC TCCAGAAGGA ATTACTTTTG AACTTCCAAA CCAACAACA	7620
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CTTCGTTTAC CAGAACCATA TAAAGGTAAA GGTATCCGTT ACGTTGGTGA ATTCGTTTCG	7740
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AACCAGATAA AAACAACTC CGCCAAAAC GCCACCGTCG CGTTCGCGGA AACTCTCTG	7920
GAACTGCTGA TCGCCACGT TTGAACGTAT TCCGTTCTAA TACAGGCATC TACGCTCAAG	7980
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GAAAATGGCA TTAAAGACA ATGCAGTTGA ATTAGAAGAA CGCGTAGTTG CTGTCAACCG	8280
TGTTACAAAA GTTGTTAAAG GTGGACGTCG TCTTCGTTTC GCAGCTCTTG TTGTTGTTGG	8340
TGACCACAAT GGTCCGCTAG GATTTGGTAC TGGTAAAGCT CAAGAAGTTC CAGAAGCAAT	8400
CCGTAAAGCA GTAGATGATG CTAAGAAAAA CTTGATCGAA GTTCCTATGG TTGGAACAAC	8460
AATCCACAC GAAGTTCTTT CAGAATTCGG TGGAGCTAAA GTATTGTTGA AACCTGCTGT	8520

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AGAAGGTTCT GGAGTTGCCG CTGGTGGTGC AGTTCGTGCC GTTGTGGAAT TGGCAGGTGT	8580
GGCAGATATT ACATCTAAAT CACTTGGTTC TAACACTCCA ATCAACATTG TTCGTGCAAC	8640
TGTTGAAGGT TTGAAACAAT TGAAACGCGC TGAAGAAAT TCTGCCCTTC GTGGTATTTT	8700
AGTTTCTGAT TTGGCATAAG AAAGGGGATA AAATGGCTCA AATTAAAAAT ACTTTGACTA	8760
AGTCTCCAAT CGGACGCATT CCATCACAAC GTAAACTGT TGTAGCACTT GGAAGTGGCA	8820
AATTGAACAG CTCTGTTATT AAAGAAGATA ACGTGTCTAT CCGTGGTATG ATCACAGCAG	8880
TATCTCACTT AGTAACAGTT GAAGAAGTAA ACTAATGAaG TTTTAGGGGA TGTGCACTGT	8940
ACCATCCCCCT AAAACTAGAT ATAGTCATCT ATGATGACAT CGTATAGGCG AGTTGATGGG	9000
GGAGACAACC TTTTCTCCCT TATCGGCGCT AGCATTTTAC AAAAGAGGAG AAAATAAAAA	9060
TGAAACTTCA TGAATTGAAA CCTGCAGAAG GTTCTCGTAA AGTACGTAAC CGCGTTGGTC	9120
GTGGTACTTC ATCAGGTAAC GGTAAACAT CTGGTCTGG TCAAAAAGGT CAAAAAGCTC	9180
GTAGCGGTGG CGGAGTTCGC CTTGGTTTTG AAGGTGGACA AACTCCATTG TTCCGTCGTC	9240
TTCCAAAACG TGGATTCACT AACATCAACG CTAAAGAATA CGCAATTGTG AACCTTGACC	9300
AATTGAACGT CTTTGAAGAT GGTGCTGAAG TAACTCCAGT TGTTCCTATC GAAGCAGGAA	9360
TTGTTAAAGC TGAAAAGTCA GGTATTAAAA TTCTTGGTAA CGGTGAGTTG ACTAAGAAAT	9420
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TTAAAGTCAA GCAGGTTTCA TCAAAAATTT TATTTACAAT TTTTATCGTT TTGGTCTTTC	9600
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GATTATCCTT CTTAAACATG TTGAGCTTGG TGTGCGGGAA TGCCCTAAAA AACTTTTCGA	9720
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CAGCTGGTTT TAATACCTTG GCTGGAGCTC AATTGATTAA AACTGCTTTA ACTCCACAAG	9960
TTTTTCTGAC GATTGGTATC ATCTTAACAG CTGGTAGTAT GATTGTCACT TGGTTGGGTG	10020
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TTTCCTCAAT TCCAGAGATG ATTCAGGGCA TCTATGTGGA CTACTTTGTG AACGTCCCAA	10140
GTAGCCGTAT CACTTCATCT ATCATTTTCG TAATCATTTT GATTATTACT GTATTGTTGA	10200
TTATTTACTT TACAACCTAT GTTCAACAAG CAGAATACAA AATTCCAATC CAATATACTA	10260
AGGTTGCACA AGGTGCTCCA TCTAGCTCTT ACCTTCGGTT AAAAGTAAAC CCTGCTGGAG	10320

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TTATCCCTGT TATCTTTGCC AGTTCGATTA CTGCAGCcTG CGGCTATTCT TCAGTTTTTG	10380
AGTGCCACAG GTCATGATTG GGCTTGGGTA AGGGTAGCAC AAGAGATGTT GGCAACTACT	10440
TCTCCAAC TGATTGCCAT GTATGCTTTG TTGATTATTC TCTTTACATT CTTCTATACG	10500
TTTGTACAGA TTAATCCTGA AAAAGCAGCA GAGAkCCTAC AAAAGACTGG TGCCTATATC	10560
CATGGAGTTC GTCCTGGTAA AGGTACAGAA GAATATATGT CTAAACTTCT TCGTCGTCTT	10620
GCAACTGTTG GTTCCCTCTT CCTTGGTGTG ATTTCCATTT TACCGATTGC AGCTAAAGAT	10680
GTATTTGGTC TTTCTGATGT TGTGTCCTTT GGTGGAACAA GTCTCTTGAT CATTATCTCT	10740
ACAGGTATCG AAGGAATCAA GCAATTGGAA GGTTACCTAT TGAAACGTAA GTATGTTGGT	10800
TTCATGGACA GAACAGAATA AAAGTATTTA CTGAATCAGT AAATACTGAG GGAGTGGAGG	10860
TTTAAACTCT GACATTTGTA AGAGTTGGAT CTCCCTCTT CTATTTTGTT TTTAAATCGG	10920
GGTGAAAAGA CTTTTTGCTT CTATTTAAAA ATAAAATAAG GAGATCAAAT CATGAATCTT	10980
TTGATTATGG GCTTACCTGG TGCAGGTAAG GGAACCAAG CAGCAAAAAT CGTAGAACAA	11040
TTCCATGTTG CACATATCTC AACAGGTGAT ATGTTCCGCG CTGCAATGGC AAATCAAAC	11100
GAAATGGGTG TTCTTGCTAA GTCATATATT GACAAGGGTG AATTGGTTCC TGACGAAGTT	11160
ACAAATGGAA TCGTAAAAGA ACGCCTTTCA CAAGATGATA TTAAAGAAAC AGGATTCTTA	11220
TTGGATGGTT ACCCACGTAC AATTGAACAA GCTCATGCCT TGGACAAAAC ATTGGCTGAA	11280
CTTGGCATTG AACTAGAAGG TGTATCAAT ATTGAAGTA ACCCTGACAG CCTTTTGGAA	11340
CGTTTGAGTG GCGTATCAT CCACCGCGTA ACTGGAGAAA CTTTCCACAA GGTCTTTAAC	11400
CCACCAGTTG ACTATAAAGA AGAAGATTAC TACCAACGTG AAGATGATAA GCCTGAGACA	11460
GTAAAACGTC GTTTGGATGT TAATATTGCT CAAGGAGAAC CAATCATTGC TCACTACCGT	11520
GCCAAAGGTT TGGTTCATGA CATCGAAGGT AATCAAGATA TCAATGATGT CTTCTCAGAT	11580
ATTGAAAAG TATTGACAAA TTTGAAATAA AGCGTTTTC ACAC TTGCAA AAATCCGCTA	11640
CAAATGTTAT ACTGAGATAG TCTGACTTAT AATTGTTGTC TCTGTGTCTA GAGGCATCGA	11700
ATCGAAATTT ATGGAGGTGC TTTTGCCTGG CAAAAGACGA TGTGATTGAA GTTGAAGGCA	11760
AAGTAGTTGA TACAATGCCG AATGCAATGT TTACGGTTGA ACTTGAAAAT GGACATCAGA	11820
TTTTAGCAGG G	11831

(2) INFORMATION FOR SEQ ID NO: 66:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 10726 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double

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(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 66:

CCCCGCATTT GAAAGCTATT CGTGAAGGAT TTATGATGGC AATGCCTTTG ATTTTAGTCG	60
GCTCTTTTATT TCTTATTCTA ATCAGTTGGC CTCAAGAGGC TTTTACAAAT TGGCTGAATA	120
GTGTTGGATT GCTAAGTATC TTGACAACTA TGAATCAGTC AACAGTAGCG ATTATCTCCT	180
TGGTCGCTTG TTTCCGTATT GCCTACAGGT TGTCGGAAGG ATATGGTACA GATGGTCCGT	240
CGGCAGGGAT CATAGCCTTA TCCAGTTTGG TATTGATGGC ACCTCGTTTT TCGAGTATGG	300
TTTATGATAA AAATGGGGAG CAGGTCAAGC AGTTATTTGG CGGCGCAATA CCATTTTCTA	360
GCCTGAATGC ATCTTCTTTG TTTATGGCGA TTAATTATTG ATTGGTTACA GCAGAGATTT	420
ATCGTATGTT TATCCAGCGC GGAATTACGA TAAAAATGCC AAGTGGTGTC CCAGATGTAG	480
TAAGTAAATC ATTTTCAGCT CTTTTATCTG GTTTTACTAC TTTTGTTTTG TGGGCTTTGG	540
TCTTAAAAGG TCTTGAAGCG GCAGGAGTTG CAGGAGGTCT CAACGGACTC CTAGGTGCAA	600
TTGTTGGAAC ACCGCTTAAG TTAATTGCAG GAACGCTTCC AGGTATGATT CTATGTGTTA	660
TTGTAAATC ATTCTTTTGG TTCTGTGGAG TTAATGGGGG ACAAGTTTTA AATGCTTTTG	720
TAGACCCAGT TTGGTTACAA TTTACTACAG AAAACCAAGA AGCTGTGGCT GCAGGACAAA	780
CACTCCAACA CATTATTACA TTACCGTTTA AAGATTTATT TGTATTTATT GGTGGCGGTG	840
GAGCGACTAT TGGTCTTGCG ATTTGTCTCT TCCTATTTAG TAAGAGTCGT GCGAATAAAA	900
CATTAGGTAA GCTAGCTATT ATACCGTCTA TTTTAAATAT CAATACAGCT ATTCTATTTA	960
CGTTTCCAAC AGTTTAAAT CCGATTATGC TGATTCCGTT TATTGCTACT CCTACAATCA	1020
ATGCCTTGAT TACCTATGTA TCAATGGCTG TAGGATTAGT ACCCTATACA ACAGGTGTAA	1080
TCCTTCCGTG GACAATGCCA CCGATTATAG GAGGCTTCCT TGCAACAGGG GCTAGTTGGC	1140
GAGGAGCTCT ATTACAAGTT GTTTTGATTT TGGTTTCTGT AGCAATTTAT TATCCATTCT	1200
TCAAAATTGC AGATAAACGC AATCTTGAAA AAGAAAAAGC TACTGTTGGA GGGAAATAAG	1260
ATGGTTATCA GAGTATTTGA TCAACAGAAA AATACTTATT CTAGCTTTGC CTTAGAGGAA	1320
TTAAGTTACT ATATGAATCG GGTCTTTAAG ACTAACATAG AGCTTGTCGA GGAGAAGGAA	1380
GCGGATATTT TTGTAGGATT AGTCAATAAA GAGGACAGAA AAGACCATGT TCTTATCTCA	1440
TTAGACAAGG GTAAGGGGAG AATTGAGTCT AATACAATTG TAGGTTTACT TATTGGAATT	1500
TACCGAATGT TTCATGAATT TGGGGTTGTG TATACTAGAC CAGGGCGCAG ACATGACTTT	1560
GTTCCAGAGT TACGATTTGA AGATTTTTTA GATAAACAGC TATCTATAGA TGAAACAGCC	1620

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AGTTACTATC ATAGGGGAGT ATGTATAGAG GGAGCGGATT CATTTGAAAA TATACTAGAT	1680
TTCATTGATT GGCTACCTAA GATTGGGATG AACAGTTTTT TCATCCAGTT TGAAAATCCT	1740
TACTCTTTTT TGAAACGTTG GTATGAACAT GAATTTAATC CATATCTAAA TAAAGAACAA	1800
TTTTCAAATG AATTAGTACA AGAATTGAGT GATAGGTTGG ATAAAGAATT GCAAAAAAGA	1860
GGTCTTATTC ATCATCGTGT TGGTCATGGA TGGACAGGTG AAGTTTTAGG TTA CTCTTCA	1920
AAATTTGGCT GGAATCAGG TCTTAGTATT TCAGAGGAGA AGAAACCCTA TGTCGCTGAA	1980
ATAACGGGA AACGAGAATT GTTTAATACG GCTCCGATTT TAACCAGCCT GGATTTTTC	2040
AATCCAGATG TAGCTGATAA GATGGTAGAA ATTATCAAGG ATTATGCCAA GAAAAGACCT	2100
GATGTTAACT ACTTACATGT ATGGTTGTCG GATGCTCGTA ATAATATTG TGAATGCGAA	2160
AACGTGATAC AAGAATTGGT TTCGGATCAG TATATTCGTA TTCTCAATCA ATTGGATAGG	2220
GCTTTAACGA GTGAGGGATT AGATACAAAG ATTTGTTTTT TGCTTTATCA TGAGTTGTTA	2280
TGGGCACCTC AGAAAGAAAA ATTAGATAAT CCTGAACGCT TTACCATGAT GTTTCACCG	2340
ATTACAAGAA CATTTGAAAT GAGTTATGCA GATGTAGATT TTGACAATTC CATACCTACG	2400
CCTAACCTT ATATGCGTAA TAAAATTATA CTTCCGAATT CTCTTGAGGA AAATTTATCT	2460
TATCTTTTTG AGTGGCAAAA AGCATTTAAA GGAGATAGTT TCGTATATGA CTATCCTTTA	2520
GGGCGTGCTC ATTATGGCGA TTTAGGCTAT ATGAAAATTA GTCAAATAT TTACAGAGAT	2580
GATCTTATC TTTCCAACCT ACATTGTAAC GGGTACATTT CGTGTCAAGA ATTACGTGCC	2640
GGATTCCTC ATAATTTTCC TAATTATGTC ATGGGGGAAA TGCTCTGGAA GAAGACAAGA	2700
AGTTATGAAG AATTGATTGA AGAATACTTT TCTGCTTTGT ATGGGGGAAA TTGGCAGTCT	2760
GTTGTTGAAT ATTTAGAAAA ATTATCCATT TATTCCTCTT GTGATTATTT TAATGCAATT	2820
GGCAGCCGTC AAAGTGATGT TTTAGCGAAT CATATTATA TAGCTTACAA TCTAGCTGAT	2880
AATTTTITAC CAATTATTGA GGAAAATATT TCTAAGTTAT TAAATAGTCA AAAGGATGAA	2940
TGGAACAGC TCAGTTATCA TCGTGAATAT GTTGTTAAGA TGGCGAAGGC TTTATATCTT	3000
CAAGCAACTG GAAAAACAAG GCAAGCTCAA GATGAATGGA GAAATGTGTT GAATTATATC	3060
CGTGGGCACG AATTGCTATT TCAATCTAAT TTGGATGTTT ATCGTGTAAT TGAAGTAGCA	3120
AAAAATTACG CTGGTTTCCA CTTATAAATC ATAAGTATAG AAAATGAACT AAGGTATTCA	3180
GAGAAGATTG ATCCTAAATA TTATGAAATT TAAGGATTTT TAAGATATTT AGGGTCAACT	3240
TTCTATTTAT ATCGTAGCGA AGTCATTTTA ATAATGATGT GTAAAAGATG GATCAAGATT	3300
GAGGAGGAAG AAAGATGAAA TCAAAAGAAG AAATAAATAT GCTTGGTTTT ACAATTGTCG	3360

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CTTACGCAGG AGATGCAAGG TCAGATTTGA TGGATGCTTT GGCGTTTGCG AGAGATGGAT	3420
ATTTTGAACA GGCAAGAGAA TTGGTTGAGT CTGCAAACGA CTCAATAGTG TCTGCCCATC	3480
GAGAACAGAC TAATTTATTA GCGGAGGAGG CATATGGAGA TAATTTTGAA GTGAGCTTTA	3540
TTATGATTCA TGGTCAAGAT ACTTTGATGA CAACGATGCT ATTGTATGAT CAGGTAAAGT	3600
TTTTTATTGA TGAATATGAA CGAATTCGAA AGATTGAAGA ACATATTGGT TTGCAATGAG	3660
GATTAGTCAT GGAAAATTTA CAGGTAAAG CCTTACCGAA GGAGTTTTTA TTAGGAACTG	3720
CTACCGTCTG TTATCAAGTA GAGGGTGCAA CTAGGGTAGA TGGCAAAGGA ATAAATATGT	3780
GGGATGTTTA TTTGCAAGAA AATAGTCCGT TCTTACCAGA TCCAGCTAGT GATTTTTATT	3840
ATCGTTACGA AGAGGATATA GCTTTGGCGG CAGAACATGG TTTGCAGGCT TTGCGTTTAT	3900
CTATTTCTTG GGTTCGTATA TTTCTGATA TAGATGGGA TGCTAATGTA TTAGCTGTTT	3960
ATTATTACCA TAGAGTTTTT CAGTCTGCT TAAACATAA TGTGATTCCG TTTGTTTCTT	4020
TACATCATTT TGATTCGCCT CAGAAAATGT TAGAACAGG GGATTGGTTG AACAGAGAGA	4080
ATATTGATCG TTTCATACGA TATGCTCGCT TTTGTTTCCA AGAATTTACA GAAGTCAAGC	4140
ATTGGTTTAC AATCAATGAA CTGATGTCTC TTGCTGCAGG TCAATATATA GGAGGTCAGT	4200
TTCTCCAAA TCATCATTTT CAATTATCTG AAGCAATCA AGCGAATCAT AATATGTTGT	4260
TGGCGCATGC TCTTGAGTC CTCGAATTC ATCAATTAGG GATTGAGGGA AAGGTAGGTT	4320
GTATTCATGC TTAAAGCCA GGCTATCCTA TTGATGGCA AAAAGAAAAT ATTTTGGCAG	4380
CTAAACGGTA TGATGTTTAT AATAATAAAT TTCTATTAGA TGGAACTTTT TTGGGCTACT	4440
ACAGTGAGGA CACGCTTTTT CACTTGAATC AAATATTGGA AGCTAATAAT TCTAGCTTTA	4500
TTATTGAAGA TGGTGATTTA GAAATTATGA AGAGAGCTGC ACCTCTTAAT ACGATGTTTG	4560
GGATGAATTA TTATCGTTCA GAATTTATTC GTGAATACAA AGGTGAAAAT AGACAAGAAT	4620
TTAATTCAAC AGGAATAAAA GGACAGTCTT CTTTTAAATT AAATGCTCTA GGTGAATTTG	4680
TAAAAAACC TGGTATTCCG ACAACAGATT GGGATTGGAA TATTTATCCT CAAGGGTTAT	4740
TTGATATGTT GCTTCGTATC AAAGAAGAAT ATCCTCAACA TCCGGTCATT TATTTAACTG	4800
AAAATGGTAC AGCCCTTAAA GAAGTTAAGC CAGAGGGCGA GAATGATATT ATTGATGACA	4860
GTAAGAGAAT CCGTTATATT GAGCAACATT TACACAAAGT TTTAGAGGCT CGAGATAGAG	4920
GAGTCAATAT TCAAGGCTAT TTTATATGGT CTTTGCAAGA TCAATTTTCT TGGGCGAATG	4980
GCTACAATAA GCGATATGGT CTTTCTTTG TTGATTATGA AACACAGAAG AGATATATTA	5040
AGAAAAGTGC TCTTTGGGTA AAAGGGCTAA AACGGAATTA AGGTTAGCGA TTTGACTGAT	5100
GTTTAATATG TTTTAAATAT GAGGTTGAAT TTTTATAGG AGGAGTTTTA TGGATAAGCT	5160

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AGTCGCTGCC	ATTGAAAAGC	AACAAGGGAA	ATTGAAAAA	ATTCTACTA	ATAACTATAT	5220
GATGGCTATT	AAAGATGGAT	TCATTGCTAC	TATGCCTTTA	ATTATGTTTT	CAAGCTTTTT	5280
GATGATTATT	ATTATGATTC	CTAAAAATTT	CGGAGTAGAG	TTACCGAGTC	CAGCTATTGT	5340
CTGGATGAGA	AAAGTGATA	TGTTAACCAT	GGGAGTTTTG	GGTATTATTG	TTTCAGGGAC	5400
TGTTGGAAG	TCATTAGTTG	GAAATGTAA	CAGAAAAATG	CCTCACGGAA	AGGTAATAAA	5460
TGATATTTCT	GCAATGTTGG	CAGCCATATG	TAGTTATCTG	GTATTAAC TG	TAACGCTTGT	5520
AGTTGATGAG	AAGACGGGAT	CTACAAGTTT	GTCGACAAAC	TATTTAGGAT	CTCAAGGATT	5580
GATAACTTCG	TTTGTCAAGT	CCTTTATTAC	TGTAAATGTT	TACCGATTCT	GTATTAAGCG	5640
AGACATTACT	ATTCATTTAC	CTAAGGAAGT	TCCTGGGGCT	ATATCACAAG	CTTTTAGAGA	5700
TATTTTCCCT	TTTTCTTTTG	TTTTACTTAT	TAGTGGTTTG	TTAGATATTG	TATCTCGGTT	5760
TAGTTTAGAT	GTTCTTTTGG	CCCAAGTATT	TCAACAAC TA	TTGACTCCTA	TTTTTAAGGG	5820
GGCAGAAATCA	TATCCTGCTA	TGATGTTGAT	TTGGTTTATG	TGTGCTTTGC	TTTGGTTTGT	5880
TGGAATTCAT	GGACCATCTA	TTGTCTTACC	TGCTGTTACA	GCTTTGCAAC	TGAGCAATAT	5940
GGAAGAGAAT	GCTCAACTTC	TTGCAAAATG	GCAGTTCCTT	TATCATTTCT	TAACACCTAA	6000
TTTCGGGAAT	TATATCGCTG	CTATTGGAGG	AACGGGGGCT	ACCTTTGTTG	TACCATTTAT	6060
TTTGATTTTC	TTTATGCGGT	CTAAACAATT	AAATCGGTA	GGTAAAGCTA	CAATTACTCC	6120
TGTTTTATTT	GCGGTAAATG	AACCTCTTCT	ATTTGGTATG	CCTGTTATTT	TGAATCCCTA	6180
TCTTTTGTGC	CCTTTTGTGA	TGACTCCACC	AGTGAATGTA	TTTCTAGGAA	AGGTCTTTAT	6240
TGATTTCTTT	GGAATGAATG	GATTTTATAT	CCAGTTACCT	TGGACCTTTC	CTGGTCCCTT	6300
GGGATTGTTA	ATTGGAACGA	ATTTTCAACT	TATCTCCTTT	GTATTTTATAT	CTTTGATTTT	6360
AGTTGTCGAC	ATATTGATTT	ATTTGCCATT	CTGTAGAGCG	TATGATAGAC	AGTTACTGGT	6420
GAAAGAAGAT	ATTGCAAGCT	CAAATGATAT	TATTTTAGAG	GAGGATACAA	GTGAAATAAT	6480
TCCTGGTGAG	ATAGATGAAA	TAAAAAGTAA	GGAGTTGAAA	GTAAGGTTTC	TTTGTGCAGG	6540
GTCTGGAACA	AGTGCACAAT	TAGCCAATGC	AATTAACGAG	GGGGCTAACT	TAACAGAGGT	6600
TAGAGTGATT	GCGAATTCAG	GAGCGTACGG	AGCTCATTAT	GATATTATGG	GTGTTTATGA	6660
TTTAATTATT	CTGGCCCCAC	AAGTTCGGAG	TTATTATAGA	GAGATGAAGG	TGGATGCAGA	6720
AAGATTAGGT	ATTCAGATAG	TTGCTACCAG	AGGAATGGAA	TATATTCATT	TAACAAAGAG	6780
TCCAAGTAAA	GCCTTACAAT	TTGTATTGGA	GCATTACCAA	GCTGTGTAGT	AAGTTTTTCC	6840
ATCTTTTATT	TGAGTAAAGA	TTTGTTTTAC	AGATAGGCTT	GGATTTAAAA	ACGTTCCCCC	6900

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TTTTTTAATA	TAAGAATCCC	TCTTTCACAA	TTGTAAAAAG	AGGGATTTTG	TATTTTATCT	6960
CTTAGACCAA	GTTCTCTTCA	TAAAGAGAAG	GAGGATTGGG	TAAATCTCCA	AGCGCCCTGC	7020
AATCATTGCA	AAGGATAGGA	GAATTTTGA	GATGGGACTA	AAGATTGAGA	AACTAGAAGT	7080
GGTTCCTAGA	ATAGGCCCGA	TATTATTGAA	ACAGCTAAAG	ACAGCGCTGG	TCACGACCAG	7140
AAAATCATTG	CTATCTAGGC	TGACAATAAA	GATAAGCGCT	AGCAAAATCA	TAGCATAGAT	7200
GACAAAGTAC	TTGAGAATCT	TATGCTGGGT	ATCTTTGTCA	ATCACCGTTT	TATTAACATG	7260
GAGGGTCAAA	ACACGGTGGG	GCGATAGGAT	TGACAAAATT	TGGT'TTTTGG	CAATTTTGA	7320
AAGGATGAGG	CCTCGAATAA	TCTTGAGTCC	ACCTGCAGTT	GATCCAGCAG	AGCCACCGAT	7380
TGCCATGAGG	AAAAGGAGGA	TAAACTGGGA	GAAGAGGGGC	CAGTTGGTAA	TATCTCCATA	7440
TCCAAAACCA	GTTGTGTGTA	TGATGTTGGA	AACCTGGAAG	AAGGTCATTT	CAAAGCTCTT	7500
TGAAAACCTT	GGGTAGAGGT	AGAGGGTGTT	GAGGCTAATC	AAGCCTGTAG	AAACCAGTAC	7560
AATGACCAAG	TAAGCCCTAA	GCTCTTCATC	TCCAAAGAAG	GCCTTGATGC	GACGGAGCAT	7620
GAGGTAGTAG	TAGAGGTGA	AATTTACTCC	AAAAACCAGA	ACTCCGATAC	TGACCAGATA	7680
GGTAATCAGT	GAGCTGCCAT	AGTGGGCAAT	TCCGTCGTTA	TAGACGGTAA	AGCCTCCAGT	7740
TCCCGCTGTC	CCCATAGCAA	TAACAAAAC	ATCGTAGAGA	GGCATACCGG	CTAGATAATA	7800
GATGATGACA	AAGAGGGAGA	AGAGAGCTAG	ATAAAGGAGA	TAGAGAATCT	GGGCAGTGTT	7860
TTTTAGTTTG	GATACAACCT	TGCCAAAAAC	AGGACCTGGA	ACCTCAGCCT	TCATCACCTC	7920
TAGGTGGCTA	TTTTTGGCAT	TGTCCATAAT	AGCAAGTGCA	AAAACAAGCA	CTCCCATCCC	7980
TCCAATCAAG	TGGGTAAAC	TTCGCCAGAA	GAGGAGGGAA	CGGCTGAGAA	CCGAAACGTC	8040
GTTCAAAATA	CTTGCTCCAG	TAGTTGTAAA	TCCAGAACTA	ATTTCAAAAA	AGGCATCAAT	8100
AAGGCTGGGG	ATTTGCCAG	AAAAGACAAA	GGGGAGACCA	CCAAAGAAAG	ACCAAAGGAT	8160
CCAACAGAGG	GCAACGATCA	AGACTCCCTC	CTTGGCATAA	ATCCGTTGAT	TTTTTGGCTT	8220
CTGTAAACTC	CCTGAACCGC	CTAACAATAC	GAGAATCCCT	ATGGTCGAAA	AGAGGGCTGT	8280
AAAGACTTGG	CTCGATTAC	GGTAATAGAC	AGCAATCGCA	ACAGGAACCA	AAAGAAGAAC	8340
AGCTTCAATC	AAAAGTAATT	TTGAAAGGAG	GTAACGAATC	ATACTTTTAT	TCATTTCTTA	8400
CCTCGCGATC	AAGTCATAAA	TCTTGGTGAT	GT'TTGGCAAC	AAGGTTGTTA	CTAGGAGCTT	8460
GTCTCCAAC	TCCAACATAT	CCTCCCCAGT	TGGGAAAATA	GTCTTGCCCT	TTCGAATAAT	8520
GGCTGCAATA	AGAACCCTT	TTT'TCAATTT	CAGTTGAGAA	AGAGGTTTGG	CAGTCATTTT	8580
ATTGGCTTCC	TTGATATGGA	ATTGCAGGGT	TTCGATTTGG	CCATTGGCTA	GATGGTGCAT	8640
AGCTTGAAGG	TCTGAATACT	GGGCATTAAC	TCGACCACGA	ATAAAGTGCA	TAATCGTATC	8700

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TACAGCGATG CTTTTAGGTG TGATGATACT TGAAAAATCA GGCGCATTGA TAATCTCGAG	8760
GAGACTGGTA CGATTGACCT TAGTAATATT TTTCTGTACA CCTACCCTGT CAAGGAACAT	8820
AGATGTAATC AGATTTTCCT CATCGACTCC TGTTAGAGTC GCAACGGCAT CATAGTGTG	8880
AGCACTTTCT TCCAGCAGGA TATCTTTTGC GGTTCATCT CTTGAACGA TGTAAGATT	8940
TGGGAATTC TCGCTAAAGA AGCTGGCGAT TTCAGGATTG ATTTCAATGA CTTTGTATC	9000
GATACGACTA TCTTTGAGAA TACCAAGTAG ATAATAGGCA ATTCTACCTG CCCCACGAT	9060
GAGAAGGCTC TTCACGGCGC GTGATTTAAA ATAATTATGG AAGAGTATCA TATCGACACG	9120
GTTACCAGTG ACAAAGATTC TATCTTTATC CTGTACAGTC ATGTCACCGC TTGGAATGAT	9180
AATTGTATGA TCCCTCTCTA TCGCACAGAC AATGACATTA CCAAATTTT TACGAAAATC	9240
AGAAATGGGC ATTTGGCAAA GACCGCTGGT GGACTTGACG ACAAATTCCA TGAGGCTAAC	9300
GCGTCCACCA GCAAAGCGTT CGACAGACAG GCGTTGGGG AAGTCAATGA TATTCGCGAT	9360
AGCGCGGGCA GCCAAGAGCT CAGGATTAAC GATAAGAGAA AAACCGAGAA TATCTTTTC	9420
CTTGAAATAA GAGTTAGAAT ATTCAGGGTT CCGCACCCGA ACGATAGTTT CTTTAGCTCC	9480
CATTTTCTTG GCTAGAACTG CTGCAATCAT GTTGACTTCA TCGTGCTCAG TCAGGGCGAT	9540
AAAGATATCA CAATCTTGA CGCTGGCTTG CTCAAGAATG GCAAAATCGG CCCCCTTACC	9600
AAGGATACCA ATGATATCAA AGCGACTGAC AATATGATTG AGAACAGCTT CGTCTTGCTC	9660
AATCAGCAAA ACATCATGCT TTTCTGCAAC CAAGGAGCGA CAGAGGGCAA AACCAACTTT	9720
TCCCCCTCCG ACAAGGATAA TTTTCATAAT AAAACCTACT TTTTCATGAT GTAACATCA	9780
TACCCTTTTT CAAGAAAAAA TGCACCTACT AGCTAATAAC AAGAGTTTTT AGTGAAAATT	9840
CGCTATAAGG TAAAACTATA CCCTAACCAA TTGAAATAGC TATTAGCGAC TTTCTCTGAA	9900
ATATGGTATG ATAAAGGATA TACAAGGAGA TAAATGAAT AATAATTTAC TGGTATTACA	9960
ATCAGACTTT GGTCTGGTTG ATGGTGCGGT ATCGGCTATG ATTGGAGTGG CTTTAGAAGA	10020
GTCTCCAACC TAAAAATAC ATCACTTGAC GCACGATATC ACGCCTTATA ATATTTTGA	10080
GGGGAGCTAT CGTCTCTTTC AGACGGTGA TTA CTGGCCT GAGGGAACGA CGTTTGTATC	10140
GGTGTGCGAT CCAGGTGTCG GTTCGAAACG TAAGAGTGTA GTTGCCAAGA CTGCAAAAAA	10200
TCAATACATT GTCACGCCAG ATAATGGGAC GCTTTCCTTT ATCAAGAAAC ACGTTGGCAT	10260
TGTAGCCATT CGTGAGATTT CTGAGGTGGC CAATAGGCGT CAAAACACAG AGCATTCTTA	10320
TACCTTCCAC GGTGCTGATG TCTATGCCTA TACTGGTGCT AACTGGCCA GTGGTCACAT	10380
TACTTTTGAG GAAGTAGGGC CAGAGCTCAG TGTGGAACAG ATTGTAGAGC TTCCAGTCGT	10440

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AGCGACCATC ATAGAAGATC ATCTGGTGAA GGGAGCCATT GATATTCTGG ATGTGCGTTT	10500
CGGTTTCGCTT TGGACCTCTA TCACACGGGA AGAATTTTAC AAGCTGGAAC CAGAATTTGG	10560
TGATCGTTTT GAAGTGACCA TCTATCATGC TGATATGCTG GTCTATCAAA ATCAGGTTGT	10620
CTATGGCAAA TCATTTGCAG ATGTGAGAAT TGGGCAACCS ATcTTTACrc TCAGCaTCTt	10680
CGATTAGCTG GGCAATTCGT TCTAGTTGGA TTTCGTCAAT CAAGGT	10726

(2) INFORMATION FOR SEQ ID NO: 67:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 7163 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 67:

TTATCTTTAA CGATATCAAT CAAGATCTGG TCAATAAAGG GATTGGGGCT TATCGTGAAG	60
TTGGCATCCA AGCCCATGGA TATGTCTGTG ACGTGACAGA CGAGGACGGT ATCCAAGCCA	120
TGGTCAAGCA AATCGAACAA GAGGTTGGTG TCATTGACAT CCTCGTTAAT AACGCTGGTA	180
TTATCCGCCG AGTTCCAATG TGCGAAATGA GCGCCGCTGA TTTCCGTAAG GTCATCGATA	240
TTGACTTAAA CGCACCATT TATCGTTTCAA AGGCAGTTAT TCCTTCTATG ATAAAGAAAG	300
GGCATGGAAG GATTATCAAT ATTTGTTTGA TGATGAGCGA ACTGGGACGT GAAACAGTTA	360
GCGCTTATGC TGCTGCTAAA GGGGGCTTGA AAATGTTGAC CCGCAACATT GCGTCTGAAT	420
ACGGTGGAGC CAATATCCAA TGTAACGGAA TTGGACCGGG TTATATTGCC ACTCCTCAAA	480
CAGCACCTCT TCGTGAATG CAAGAAGATG GTTCTCGCCA CCCATTTGAC CAGTTCATCA	540
TTGCAAAAAC ACCTGCTGCA CGTTGGGGAA ATACTGAAGA TTTGATGGGC CTGCTGTCT	600
TTCTCGCTAG TGATGCCAGC AATTTTGTCA ATGGCCACAT CCTATATGTA GATGGCGGTA	660
TCTTAGCCTA CATCGGAAAA CAACCTGAGT AAAAATAGAA AGAAGATCTT ATGAAAATCG	720
CATTAATCAA TGAAAATAGT CAAGCTAGCA AGAATCACAT TATTTACGAT AGTCTAAAAG	780
AAGCGACAGA TAAAAAAGGC TACCAATTAT TTAACATATG TATGCGTGGA GAAGAAGGAG	840
AAAGTCAATT AACTTATGTG CAGAACGGAC TAATGGCTGC CATCCTTTTA AATACAAAGG	900
CAGTTGACTT TGTGTGTACC GGCTGTGGTA CGGGTGTAGG GGCTATGCTT GCTTTAAACA	960
GCTTCCCTGG TGTGTCTGT GGTCTAGCAG TGGACCCAAC TGACGCTTAC CTTTATTCTC	1020
AAATCAATGG TGGTAACGCC TTGTCTATCC CTTATGCCAA AGGATTTGGC TGGGGGGCAG	1080
AAC TGACCCCT CAAATTGATG TTTGAACGCT TATTTGCTGA AGAAATGGGC GGTGGCTACC	1140

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CAAGAGAACG TGTAATCCCT GAACAACGCA ACGCTCGTAT CTTAAACGAG GTGAAACAAA	1200
TCACCCACAA TGATTTGATG ACCATCCTTA AAATAATCGA CCAAGACTTC CTCAAAGACA	1260
CCATCTCTGG CAAATACTTC CAAGAATACT TCTTTGAAAA CTGCCAAGAT GATGAAGTTG	1320
CTGCTTATTT GAAAGAAGTA TTAGCCAAGT AAAGCTATTC TAAACCAGAA AGGAACTAAT	1380
GGATGACGAA AATATTACTG TTTGGCGAAC CATTAATTCG AATTTACCA TTAGATGCCA	1440
CCAGTATCGG CGATCATGTT GCCAGTTCGA CTTATTTTGG CGGATCAGAA ATTAACATCG	1500
CTTGTAATTT GCAAGCCCTG GGTATCTCAA CGAAAGTTT TACCGCACTC CCTGCCAACG	1560
AGATTGAGGA TCGTTTTCTC ACATTCTTGA AACAGCACCA AATCGATACC AGTTCAATCT	1620
GTCCGGCTTG CGATCGAATC GGCCTCTACT ATTTGGAGAA CGGCTTTGGT TGTCTGCTAAA	1680
GTGAAGTTTT CTACGATCGT AAGCATACGA GTATCAGCCA GATTCGGCCA AACATGCTAG	1740
ATATGGATTC TCTCTTTCAG GGGATTAGCC ATTTTCATTT TAGTGGAATC ACCGTAGCTA	1800
TCGGTCAAGA GGTCCGTGCG ATCCTTCTCC TACTCTTGGA AGAAGCCAAG CGCCGAGGAA	1860
TTGTCGTTTC AATGGATCTC AATCTGAGAA CAAAGATGAT TTCAGTCCTA GAAGCCAAGT	1920
ATGAATTTTC TAAGTTTGCA CGTTTTACTG ACTATTGCTT CGGTATTGAT CCTCTCATGA	1980
TTGATGACCA AAATCTAGAG ATGTTTCCAA GAGACAGTGC TAGCCTAGAA GAGGTGGAAA	2040
ATCGCATGCG ACTTTTAAAA GAAGCCTATG GTTCAAGGC CATTTTCCAT ACCCTCCGCT	2100
CTAGTGATGA GCAAGACAAA AATGTCTATC AAGCCTATGC TCTAGAAGAA CTATTTGAAG	2160
AGTCTGTCCA ACTAAAACT GCAGTCTATC AACGAATTGG TAGCGGGGAT GCCTTTTATAT	2220
CTGGTGCCCT TTACCAACTA CTCCATCATT CCTCCCTAAA AACTACCATT GACTTTGCAG	2280
TTGCGAGCGC AACTCTCAAA TGCACTCTTC CAGGAGACCA TCTCTCCACT TCCTCAACTA	2340
GTATTGAAAA TTTACTGGCA AATGCACAAG ATATCATTCG TTAGGAGAAT TACATGACCA	2400
AATCAGATAC GATTATTGAA CTAAAAAAC AAAAAATTGT CGCTGTTATT CGAGGAAATA	2460
CAAAGGAAGA AGGACTACAA GCCTCGATTG CTTGTATCAA GGGCGGTATC AAAGCTATTG	2520
AAATCGCCTA TACCAATCAG TATGCAGGAC AAATCATCAA GGAACCTGTA GACTTGTATC	2580
AGGACGATCA GAGTGTGTTG ATCGGTGCAG GTACTGTGCT TGATGCCGTA ACTGCTAGAG	2640
ATGCCATPCT AGCTGGAGCA AATTACGTTG TTTCTCCATC TTTCCATGCT GAAACTGCGA	2700
AAATGTGCAA TCTCTACAGC ACACCGTACA TTCCAGGCTG TATTACCCTC ACAGAGATCA	2760
CGACTGCACT TGAAGCCGGT AGTGAAATCA TCAAACCTT CCCAGGTAGT ACTCTCAGTC	2820
CAGCATATAT CTCTGCAGTC AAGGCACCGA TCCCACAAGT TTCCGTAATG GTAACCGGAG	2880

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GAGTCGGCCT AAACAACATC CCTCAATGGT TCGCTGCTGG TGCAGATGCC GTTGGAAATTG	2940
GTGGCGAACT CAATAAACTC GCTTCCCAAG GCAACTTTGA CCGCATCAGC GAGATTGCCC	3000
AACAGTATAT TACACTCAGA TAAAATCATA ACTACCCGTC TAACGGGTGG TTTATCTCAG	3060
AGCTATAAGC CCAAATCATC AGCCAGCGCC TAAAGACGCT GGCTTTCACG TTGTTCAAGC	3120
CTTATTGCTC TTGACTCGTC ACTTGCCTCT TTAAGAGACT TTGGTATTAC TTACCACTAT	3180
CCCTAAAGGG ATCCTCATAT TCTTTTACAC TCAATTTATC TAGTGCTATA GTAGATTGAA	3240
ACTGGAATAG TACACCTCTG CTTCTAAAAC ATTGTTAAAA ATCGATTTGA CTGTCCTGAT	3300
CGATTTTGTC CTGTTCTTAT TTCATTTTAC TATATATCAT ACTTTACTCG TTCTCAAATT	3360
TTCATACTCA TGAAGAAATC ATCCACTCGA TAATTTCTTT AATCTTGACT ATATTCTTCA	3420
ATTGTGGCTT CATTAAGCCC TACTGGACTT ACATAATAAC CTTCTCCCA GAAATGCCGA	3480
TTCCCAAAC TGTACTTGAG ATTGGCGTGT TTGTCAAACA TCATGAGTGC ACTTTGCGCT	3540
TTTAAATACC CCATAAACT TGAACACTT AGCCTCGACG GAATACTGAC TAACATGTGT	3600
ACATGGTCTG GCATTAAGTG ACCCTCGATC ATTTCAACAC CTTTATAACT ACACAAGCGA	3660
TGAAATATTT CGTCTAACT ACTTCTATAT TGATTATAGA TGACTTTTCG TCTATACTTA	3720
GGGGTGAACA CAATATGATA GAACACCTCC ACTTTGTGTA TGATAAACTA TGAGTCTTTT	3780
GTGCCATATT TTTTCTCCTT TCGCTTTACA ATTGGATTGA ACACCTTTAT TGTATCGCGT	3840
TTGGAGTTTT TTTGGTATAA CCTTCGACGC GCACCCGTAT AGCGGGTGGT TGTTTTGTCT	3900
CGCACCTCAC GGAGCGAGAC GGACTAATAT AGTGGAGTGA AATAGGATAC GAACAAATTG	3960
ATTAGGAAAA TCAATGAAT TTATAGAAAT CTTTTCAGCAG TTATAACGTT CTATTCTAGT	4020
TTCAAAACGC TATAGTCACA TAATAATGAA GTAAAAAAGG ATAAGTATCA ACTTATCCTT	4080
TTTTAAAAGA AAAATCCGAA GATATTTGGC CTCTTCGGA TTTTTCCTAT TTTCCACAGT	4140
TTCATGTAAT TCATCTAGAT GATGAACAAA TTAGTTGTTC TTTCCTCTAC GGAATAGATA	4200
AAATGCCCCA AGTAGCAAGA ACCCTAGACT TGCCAAGATT GACTGACCTT CTCCTGTCTG	4260
AGGGAGATTC TTTTGATCCG AATGGTTCCT TTCCTCTCA GATTTTTCCT TTTCTTTTGA	4320
ATTCTGTACT TGTGGCTGAG CTGCTTGCTC TAGCTTTTCA AAGACTTCCT GATCTGGAGC	4380
TGATTCTCGG GTTTCAGGAT TATAGTAGGC AATCTTATAT TCATCCCTT CTTTTCGAAT	4440
GGTATAGACT CCACGTTTCA AAACCTGGAA TTGGTTGGAA ATAGTAGAGA CAGAATCATC	4500
ATATTTCACA ATGCCCCAAA CTCCTTGTTT AGCATCATAA ACAGACTGAA GGGTTTCGTT	4560
ATTTTCGATG AGGCTACTTT CTAACCTCTT TATCATTTGA TTGAAGGTGG CACGATCCAC	4620
GTTAGGAATG AGCATATAGC CATAAGAATC TCTATTTTGC TTATGAGCCT GACTAATCGT	4680

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AAGAAATTCA TTTTCAACTT CCTTGTCTGA CTGTCCTTCA TTGATATCCT TCCAGGCTCC	4740
CTTTTGCAAA GCCTTACTCA TACTGATTGA ACTCTTCTTA AAGAAAAAGT AACCAATATT	4800
CTTTTTCGAA TCGAACGATT CTAAAAAGAC ACTTTGGGTT TCAGGATAAT CCTTTTCTTG	4860
TTCTGTAAGG GAGGCTTCTT TATCATTGAC ATAGACTTTA TATGGATTAC CTGATTCCAG	4920
TTTCTCTGG TCAATTGTAG TTGCAGCAGT ATCTGTTGAA GTGTTTGGG TATTGCTTCC	4980
TAAAAAGGCG ATCTTATCCT TTAGCATAAA CCAGCTCTTA TGAGCAGTCA ATGTTTGATT	5040
CCAGTTGGTG AAATCCATGG TTGCTGTCGC ATTGGCATCA TCTAGTTTGC TCGTTCCAAC	5100
GAAAGCAGAC GGTAAGACTT TACCTGTATC GCTATCCGCT CTCTTAGCAT CCGTCTCTGT	5160
TGTACCAGGC ATCTTATATG GATTAACGTG TGGCCAGTAG CCATCGCTAT AGTGACTCAA	5220
ATCGCCATTG TAAAGATAGA ACATCCCATC ACTCGTATAC CAACCACGTT TATTTTCTTT	5280
GTTCATGTGT TCGTAATTCA AGGTACGACT GGAAAAGAGT GACAAGCCAA ATCCAAACCC	5340
TTTCTCTGCA TTGTACATGG CTGTTTATC CATCTTGTTA AAGGCAGATA GGTAACCTGG	5400
TCTTGGAACA CTTGCGACTC CTGCATCACT TAACAAGGAT TGCATCAAAC TGATATCCTT	5460
ATAAGTCTTC AAATTCCTAA AGACATCATA ATAAGTATCC GATTGAACAA TGGTCTTCAC	5520
AAGACTCTGC AAACATTGTT TGGTTTCTCC TTCAGACATA TCCGCTATTG GGTGAATCCC	5580
TCTTAGTACT TCTACTGCGG CCACGTGCCC CTCGCTATTT GCACGACTGA TCGAGCGTCC	5640
ACGACTCATA TCCATCAACT CTCCATTAC CAGCAAAGGA GCAAACGATT TATCAATCCA	5700
GTGGTACATG GTTTGCATTT TATCTTTATC GATTGGATTC TTGGTCTTTT GAATGACTGG	5760
CAACAGTTGA GACAGGCCAT CAATCAAAAC ATTCCCATAA GCACCCGTAT AGGCAACATT	5820
GGTGTGGTCG ATATAGGATC CATCTTGATA AAAACCTTCA CCTTGGTCTA CCAACTTGAA	5880
CACTTGCTCA ATCGAGCGAA TGGTAGAAGA AATTCTTGA TCATCCTTAC GCAGTAAACC	5940
AGCTATTACT TTTACCCTTC CCATATCAAC TAAGTTTCCA CCTAGAGCCT TGAATGGGTT	6000
ATCAGTCGTC TTTTCGAAAT GTTCGGGATC TGGTACAAAT TTTTCAATCA CATCTGTATA	6060
TTTTTTAATT TCCTCATCAG AGAAGTATTC TTTCATCAGA GACAAGGTAT TGTGATGGC	6120
ACGAGGTGTA CCGATTTCAT AATCCCACCA GTTCCCAACA ATGCTCTTTT CACTATTGTA	6180
GACATGTTTA TGCATCCATT CCATGGAATC CCTGACTGTT CGAACGACAG TTTTATCTTG	6240
ATAATAACGA GAAGAAGGAT TGGTCACTTG CTGGCCATC TCCTCCAATT TCCGATAAGT	6300
GGCAGTCAGA TTTGCAGACG TTTTATAAAT TGAAAATTTT TCCCACAAAT AGGTGCGGTC	6360
CGCCTGACTT GAAATACTGG ATAGGCTATC AGCTACCTTT CCTTCCAATT CCTGGTTTAA	6420

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TTTGCCATC TGTTCATTT TAGAATCATA GTATTGATTC CCAGCGATGA TGCCATTCCA	6480
GTCATCCAAA CGGTCTGTGT ATGCATCCTT AACAGAGGCC AGAATCTTCA AAGGAATCTT	6540
TTTCACTTCC TTGCCATCTT TACTGACAAT GACATTGGTT GTCCCTTCCT TAAGAGGTTT	6600
TAAAATTCCA TTTTGTACTG AAGCAACGTC AGGATTTTCT ACCTTATAAG TATAGTCCGC	6660
AAGAGAAAAA ACATGTTTTT TTCCAATGG TAAATCAATC TTTTCCTCAA GCTGTTTATC	6720
TGTTTGAGAA TCCTCAGAAA GCTGGTCTGC TACCTCTACC AGCTCAATAT CCTTAAAGGA	6780
AACAGTCCCA GTTCCTGTTT CATAGAATAA CTCCAGCTTG ATTTTATCAA CATCTAAAGT	6840
CGGGCTATAG TCTGCTTCAA TGGTCTGCCA GTCCTTTGTT CCTGACGTCG TTGCAGAATT	6900
CCACAATCGC TTGTCCTTAC CACTTTCCTC AATGATACGA ACTTTGGCAA TCCCGATTTT	6960
ATTATCTGTT TTAATCTTGA AACGCAGTTT ATACTTTTTC TTAGCTTCAA TAGGAACCAT	7020
ACGGTGAAGC GCTGCCCTTA ATTTCTCATG GCTTGAGATA GTGATAGCCC CATCCTTAGC	7080
CTCAATGACT CGAGTTGAGG CATCTGCACT ATTCTTCTGG TCTACCCAAG CTGACCACCC	7140
CCTGAGCTTT GCTTCCTGTC CGG	7163

(2) INFORMATION FOR SEQ ID NO: 68:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 9244 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 68:

CGTTATAACA TACATGTAAG CGGTACCCAA AATGGTGCCA AGTCAAAATT TTAAAGGAGG	60
AAAATACATG TCTTCACATC CAATTCAGGT CTCTCAGAA ATTGGGAAAC TGAAAAAAGT	120
TATGTTGCAC CGTCCAGGCA AGGAGTTAGA AAACCTGTTG CCGGACTATC TTGAAAGGCT	180
TCTTTTGGAT GATATTCCTT TCTTGGAAGA TGCTCAAAAA GAACATGATG CATTTGCCCA	240
AGCTCTTCGC GATGAAGGAA TTGAGGTTCT CTACCTAGAA CAACTCGCTG CTGAATCATT	300
GACCTCTCCA GAAATCCGCG ATCAATTAT CGAGGAATAC TTAGACGAAG CCAACATCCG	360
TGATCGTCAA ACCAAGGTTG CTATTCGTGA ATTGCTTCAC GGCATCAAGG ACAACCAAGA	420
ATTGGTTGAA AAAACAATGG CTGGGATTC AAAAGTTGAA TTGCCAGAAA TTCCTGACGA	480
AGCTAAAGAT CTAACCTGACT TAGTTGAATC AGAGTATCCA TTTGCAATTG ACCCGATGCC	540
AAACCTCTAT TTAACCTGCG ACCCATTTGC AACAAATGGA AACGCCGTAT CGCTTAACCA	600
CATGTTTGCA GACACTCGTA ACCGTGAAAC ACTCTACGGT AAGTATATCT TCAAATACCA	660

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CCCAATCTAT GCGGAAAAG TGGATTTGGT CTACAACCGT GAAGAAGATA CGCGTATCGA	720
AGGTGGAGAC GAGTTAGTTC TTTCTAAAGA CGTCCTTGCA GTAGGTATCT CTCAACGTAC	780
AGACGCAGCT TCTATCGAAA AACTTTTGGT CAACATCTTC AAGAAAAATG TTGGCTTCAA	840
GAAAGTTTTG GCCTTTGAAT TTGCTAACAA CCGTAAATTC ATGCACTTGG ATACTGTCTT	900
CACTATGGTA GACTATGACA AGTTCACTAT TCACCCAGAA ATCGAAGGCG ACCTTCACGT	960
TTACTCAGTT ACTTACGAAA ACGAAAAACT TAAAATCGTT GAAGAGAAAAG GTGACTTAGC	1020
TGAACTTCTT GCTCAAAACC TTGGTGTAGA AAAAGTTCAT TTGATTCGTT GCGGTGGTGG	1080
CAATATCGTA GCAGCTGCGC GTGAACAATG GAACGACGGT TCTAACACTT TGACCATCGC	1140
ACCTGGTGTG GTAGTTGTTT ATGACCGCAA TACCGTGACC AATAAGATTT TGGAAGAATA	1200
CGGGCTTCGC TTGATTAAGA TTCGCGGAAG TGAATGGTT CGGGGCCGTG GTGGACCTCG	1260
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AGCTCACTTG AAAGATTTGA AAAAACGCAA TATTCAACAC CACTACCTTG CTGGCAAGAA	1500
TATCGCTCTC CTATTTGAAA AAACATCTAC TCGTACTCGT GCAGCCTTTA CAACTGCGGC	1560
TATCGACCTT GGTGCTCACC CAGAATACCT CGGAGCAAAT GATATTCAGT TGGGTAAAAA	1620
AGAATCTACT GAAGATACTG CTAAAGTATT GGGACGTATG TTTGACGGGA TTGAATCCG	1680
CGGATTCAGC CAACGTATGG TTGAAGAATT GGCAGAAATC TCAGGCGTTC CAGTATGGAA	1740
CGGTCTAACT GACGAATGGC ACCCAACTCA AATGCTCGCT GACTACTTGA CTGTTCAAGA	1800
AAACTTCGGT CGCTTGGAAG GCTTGACATT GGTATACTGT GGTGATGGAC GTAACAACGT	1860
TGCCAACAGC TTGCTCGTAA CAGGTGCTAT CCTTGGTGTC AATGTTTACA TCTTCTCACC	1920
AAAAGAACTC TTCCAGAAA AAGAAATCGT TGAATTGGCA GAAGGATTTG CTAAAGAAAG	1980
TGGCGCACAT GTTCTCATCA CTGAAGATGC TGATGAAGCA GTTAAAGATG CAGACGTTCT	2040
TTACACAGAC GTTTGGGTAT CAATGGGTGA AGAAGACAAA TTCGCAGAAC GTGTAGCTCT	2100
TCTTAAACCT TACCAAGTCA ATATGGACTT AGTTAAAAA GCAGGCAATG AAAACTTGAT	2160
CTTCCTACAC TGCTTGCCAG CATTCACGA TACTCACACT GTTTATGGTA AAGACGTTGC	2220
TGAAAAATTT GGTGTAGAAG AAATGGAAGT AACAGACGAA GTCTTCCGCA GCAAGTACGC	2280
TCGCCACTTC GATCAAGCAG AAAACCGTAT GCACACTATC AAAGCTGTTA TGGCTGCTAC	2340
ACTTGGTAAC CTTTATATTC CTAAAGTATA ATTTTAGATA ATAAACCGTC TACCAACAGC	2400

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TATGAGGGCT	GCGACTAATA	GCTTTAGTCC	GGTCCTCTTT	TATGTAATGG	TAATCTATTA
TTTCTTATAA	AATATGTGAA	AAATCATTAA	ATTGAAATCT	AAACGCATTC	TATTGAGTGT
GATAAAGGAG	AATTTATGGC	AAATCGTAAA	ATTGTAGTAG	CTTTGGGAGG	AAATGCGATT
CTTTCTTCTG	ACCCATCAGC	AAAGGCTCAA	CAAGAAGCTT	TAGTTGAAAC	AGCTAAGCAT
CTTGTAATAA	TGATTAAAAA	TGGAGATGAT	CTGATTATCA	CTCACGGTAA	TGGACCTCAA
GTTGGGAATC	TCTTGCTCCA	ACATTTGGCA	TCAGACTCTG	AAAAGAACCC	TGCCTTCCCA
CTCGACTCAC	TTGTGCTAT	GACAGAAGGT	AGCATCGGTT	TCTGGTTGAA	AAATGCTTTG
CAAAATGCTC	TCTTGGATGA	AGGCATCGAA	AAAAATGTTG	CCTCTGTTGT	AACGCAAGTT
GTCGTAGATA	AAAATGATCC	AGCTTTTGTT	AACCTGAGTA	AACCAATCGG	TCCTTTCTAT
TCAGAAGAAG	AAGCAAAAGC	AGAAGCCGAA	AAAAGCGGAG	CGACTTTCAA	GGAAGATGCT
GGCCGTGGCT	GGCGTAAGGT	CGTTGCCTCA	CCAAAACCTG	TTGACATCAA	AGAAATTGAA
ACCATCCGTA	CTCTTTTAAA	TAATGGTCAA	GTCGTCGTAG	CTGCAGGTGG	TGGCGGTATT
CCCGTCGTCA	AAGAAAACAA	TGGACATTTG	ACTGGTGTCTG	AAGCGGTTAT	TGATAAAGAC
TTGCGTTCCC	AACGTTTGGC	AGAATTGGTT	GATGCAGACC	TCTTCATCGT	TTTGACAGGT
GTAGATTATG	TATTTGTTAA	CTACAACAAG	CCAAACCAGG	AAAAATTGGA	ACATGTGAAT
GTGCCCCAGC	TGGAAGAATA	TATCAAACAA	GATCAGTTTG	CACCAGGTAG	CATGCTTCCA
AAAGTAGAAG	CAGCTATCGC	TTTTGTCAAT	GGTCGTCCAG	AAGGAAAAGC	AGTTATTACT
TCCCTTGAAA	ATCTAGGCGC	CTTGATTGAA	TCTGAAAGCG	GAACAATTAT	TGAAAAAGGA
TAAGTTGTTT	TACTAATAAG	ATGTATTCTA	TTTCTAGTAT	CTTTATATCA	AATTAGAAAT
TATTCTTGAA	AACATGTACA	ATATTTCAAA	AGATACTAGT	TTTAGACTTT	AATATGGTAA
AACAAATATA	AATAGAAAGC	GTTTTCTTGA	ATGTTTATTT	AAGAAAGTAG	TTGGTTTTTT
ACACTTTGTT	AGACATCAGG	AGGAAAAACA	AATGAGTGAA	AAAGCTAAAA	AAGGGTTTAA
GATGCCTTCA	TCTTACACCG	TATTATTGAT	AATCATTGCT	ATTATGGCAG	TGCTAACTTG
GTTTATCCCT	GCGGGGCCT	TTATAGAAGG	TATTTACGAG	ACTCAGCCTC	AAAATCCACA
AGGGATTGGG	GATGTCCTCA	TGGCACCGAT	TCGGGCTATG	CTAGGTACTC	ATCCAGAGGA
AGGTTCGCTC	ATTAAAGAAA	CGAGCGCAGC	GATTGATGTA	GCCTTCTTCA	TCCTTATGGT
TGGTGGTTTC	CTTGGCATTG	TCAACAAAAC	TGGTGCTCTT	GACGTAGGGA	TTGCCTCTAT
CGTGAAGAAG	TATAAGGGCC	GCGAAAAAAT	GTTAATTTTG	GTAAGTATGC	CTTTGTTTGC
CCTCGGTGGT	ACAACCTTATG	GTATGGGTGA	AGAAACAATG	GCCTTCTATC	CACTCCTTGT
GCCAGTTATG	ATGGCCGTTG	GTTTTGATAG	CCTGACTGGT	GTTGCAATTA	TTTTGCTCGG

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TTCTCAAATC GGCTGTTTGG CATCTACTCT GAATCCATTT GCGACAGGTA TTGCTTCAGC	4260
GACTGCGGGA GTTGGTACAG GGGACGGTAT CGTACTTCGT CTGATCTTCT GGGTTACCTT	4320
GACTGCTCTT AGTACTTGGT TTGTTTACCG TTATGCGGAT AAGATTCAAA AAGATCCGAC	4380
TAAGTCACTG GTTTATAGTA CTCGCAAAGA AGATTTGAAA CACTTTAACG TAGAAGAATC	4440
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GACATTCATC TTGATGGTAT TGAGCTTCAT TCCATGGACA GACCTTGGCG TTACCATTTT	4560
TGATGACTTT AATACTTGGT TGAAGTGGCT TCCAGTTATT GGTAATATTG TCGGTTTCATC	4620
TACTTCTGCA CTAGGTACTT GGTACTTCCC AGAAGGCGCA ATGCTCTTTG CCTTTATGGG	4680
TATCCTGATT GGTGTTATTT ATGGTCTTAA AGAAGATAAG ATTATCTCTT CCTTCATGAA	4740
TGGTGCTGCT GACTTGCTCA GTGTTGCCTT GATCGTAGCG ATTGCTCGTG GTATTCAAGT	4800
TATCATGAAC GACGGTATGA TTACCGATAC AATCCTCAAC TGGGGTAAAG AAGGCTTGAG	4860
CGGTCTATCT TCACAAGTCT TTATCGTTGT AACTTATATC TTCTATCTAC CTATGTCATT	4920
CTTGATCCCA TCTTCATCTG GTCTTGCCAG CGCAACTATG GGTATCATGG CTCCACTTGG	4980
AGAATTTGTA AATGTCCGTC CTAGCTTGAT TATCACTGCT TACCAATCTG CTTCAGGTGT	5040
CTTGAACTTG ATTGCACCAA CATCTGGTAT TGTGATGGGA GCTCTTGAC TGGACGTAT	5100
CAACATTGGT ACTTGGTGA AATTCATGGG CAACTCGTA GTCGCTATTA TTGTAGTGAC	5160
CATCGCCCTT CTCTCCTTG GAACCTTCCT TCCATTCCTA TAAATAGTG AGTGAGGTGA	5220
TTCCATGAAA ATAGATATAA CAAATCAAGT TAAAGATGAA TTTCTTATAT CATTAAAAAC	5280
CTTGATTTCC TATCCTTCAG TACTCAATGA AGGAGAAAAT GGAACACCTT TTGGACAAGC	5340
AATCCAAGAT GTCCTAGAAA AAACCTTAGA GATTTGTCGA GACATAGGTT TCACTACCTA	5400
TCTTGACCCT AAAGGTATT ACGGATATGC AGAAATCGGT CAGGGAGCAG AGCTTCTGGC	5460
CATTCTCTGT CATTTGGATG TTGTTCCATC AGGTGATGAA GCAGATTGGC AGACACCGCC	5520
ATTTGAAGCA ACTATCAAAG ACGGCTGGGT ATTCGGACGT GGTGTCCAAG ATGATAAAGG	5580
CCCTTCGCTC GCAGCTCTCT ATGCAGTAAA AAGCTTGCTG GACCAAGGTA TTCAGTTCAA	5640
AAAGCGCGTA CGCTTTATCT TTGGTACCGA TGAGGAAACC CTCTGGCGCT GCATGGCAGC	5700
CTACAATACC ATCGAAGAAC AGGCCAGTAT GGGCTTTGCA CCTGACTCAT CTTTCTCTCT	5760
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AGAGCTTGAA GTAGGAGGCG CCTTTAACGT TGTACCAGAC AAGGCCAACT ACCAAGGTCT	5880
CCTCTATGAA CAGGTTTGTA ACGGTCTCAA AGAAGCTGGT TATGATTACC AAACCACTGA	5940

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ACAAACCGTA	ACGGTTCTCG	GAGTGCCAAA	GCATGCTAAG	GATGCTAGTC	AAGGTATCAA	6000
TGCTGTGATC	CGACTAGCTA	CCATTCTTGC	TCCTCTCCAA	GAACACCCTG	CTCTCAGTTT	6060
TCTTGCAACA	CAAGCAGGTC	AAGACGGCAC	AGGAAGACAA	ATCTTTGGTG	ATATAGCAGA	6120
TGAACCTTCT	GGTCACCTAT	CCTTTAATGT	CGCAGGTCTC	ATGATCAATC	ATGAACGTTT	6180
TGAAATCCGT	ATTGACATTC	GGACTCCTGT	CTTAGCTGAC	AAGGAAGAAC	TAGTAGAGTT	6240
GCTTACAAGA	TGTGCACAAA	ACTACCAACT	CCGCTACGAA	GAGTTTGACT	ATCTAGCGCC	6300
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GACTGGCGAT	AACAGTCCTG	CTATTTCATC	CGGTGGTGCC	ACTTTTGCTC	GCACCATGCC	6420
AAATTGTGTA	GCCTTCGGCG	CCTTATTCCC	AGGAGCGAAG	CAGACAGAAC	ATCAGGCAAA	6480
TGAATGTGCC	GTTCTAGAAG	ATTTGTACCG	TGCTATGGAT	ATTTATGCCG	AAGCCGTCTA	6540
TCGACTTGCA	ACTTAATCAG	GCAACTGTTT	CTACCAAAAA	AAATCGACCG	ATTAATGAAC	6600
TGCACCCCAA	AAGTTAGACA	GAATAAATCT	AACTTTTGGG	GTGTTTTATT	ATGAAATTGA	6660
GTTATGAAGA	TAAAGTTCAG	ATCTATGAAC	TAAGAAAGCA	AGGACAAAGC	TTCAAACAGC	6720
TTTCAAAAAG	ATTTGGTGTG	GATGTTTCTG	GTCTAAAGTC	ATCTGAATCT	TTGAGATGAG	6780
CTTTATAAAT	CGCTTTTTC	AGTTTTTGCA	CTGGTGTTC	GATAAACTCA	AACTTTTTCAG	6840
CCGTGGTATT	GCCTGATTTT	ATAGTATATT	GAAACTAGAA	TAGTACACCT	CTCCTTCTAA	6900
AACATTTTTA	GAAATCGATT	TGACTGTCCT	GATCGATTTC	TCCTGTTCTT	ATTTTATTTT	6960
ACTATATTTG	AGCCACTTCG	TCTTTAACGG	CTTTATTCAT	AAGCTCTTGT	AATTTTCTTT	7020
TACTATCAAT	TACTTCTGAT	TTTCCGTTGT	AATTTATTGT	AATAGGTTTT	AACTTACCTA	7080
ATTTCTCGAC	ACGCTCATTA	ATTTGATCTT	TTTTGAAGGC	TGCTTATGTT	TTTCTAAGA	7140
TTTTTTCAAA	AATATATTTA	TCAGATAGCG	GTTTGTCTTC	TTCTTCAGCT	TGGTTTTTGT	7200
ATTAATTTGA	AACATAAGGA	ACAAATCCTT	CATAGTAACC	TAATGCTCCC	ATAAGTTCAA	7260
AAGCTTGTTT	TCTAATTCAA	ACCATTGCAA	CTCAGATTTC	AGCTTTTCAG	ATAAATCCTG	7320
CTCATCCAAA	TAATGACTTG	AAATTAGTGC	TGAACTCGTT	TCTGTATCCT	GTACAGGCTG	7380
AGCACCCATA	CCAGCAAAAA	ATAAACTCGT	TCCTAGCAAG	ACCGAACAAG	CTCCTATTGC	7440
ATATGGCCTC	AAAGAAAAAC	GCTGCTTTCT	CTCAAAATGA	AATTCTTTCA	TCCCATCTCC	7500
CATCATTCAT	TATTACTGTA	TATTTTGTAT	ATCAGAAATA	GTTTGTATTC	ACAAATCTTT	7560
CTAGTTATTC	CCTTATCATT	CCTAATTAAG	GGAGATAACA	TACAATAATT	TTTAGTTAAA	7620
TGTATATCGA	TGTTTTTTGT	TTTTCTTAAT	AAACGCAATA	CAAAAAGAGC	CTGTTACCAA	7680
GCTCTTTGTA	CTCAATGAAA	ATCAAAGAGC	AAATTAGGAA	ACTAGCCACA	GGTTGCTCAA	7740

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AACACCGTTT TGAGGTTGCA GATAGAACTG ACGAagTCAG CTCAAAACAC TGTTTTGAGG	7800
TTGCAGATAG AACTGACGAA GTCAGTAACA TCTATACGGC AAGGCGACGC TGACGTGGTT	7860
TGAAGAGATT TTCGAAGAGT ATTAGTCTAT TATTTCTTCT CAGCGCGAAG GGCTGACAAG	7920
ATTTGTGTTT GGATATCATC CACACCATTG GGAGTATTTG GTAAAAAGAT AGTTTGATTT	7980
CCTTTAGAGG CAAAGGTATT CAAGGTATCC AAATACTGGT TGGTCAAGAG GATAGACATG	8040
ATTTGTCTCT CTGTCATGCC AACATTGGCT TCCTTGAGTT CGGTGATAGA CTCTGCCAAT	8100
CCATCCACAA TCGCCTTACG TTGTTGGGCA ATCCCCACAC CATGAAGGCG GTCTTTTCT	8160
GCTTCTGCTT CAGCTGCAGT GACAATTTTA ATCTTGTCAG CTTCCGCCAA TTCTTGCT	8220
GCGACCCGCT TACGTTGCGC CGCATTGATT TCATTTCATGG ATTGCTTAAC TTCTGCATCT	8280
GGTTCGACCT TGGTAATCAA GGTTTTCACG ATAATGTAGC CGTAAGTGGT CATTTCTTCT	8340
GCTACTTGGT GTTGAACCTC AAGGGCAATC TCATCTTTTT TCTCAAACAA TTCATCCAAG	8400
GTTAATTTTG GAACAGAAGA GCGAAGAGCA TCTTCGATAT AAGATTTAAT CTGAGATTCT	8460
GGACGTATGA GTTTATAGTA AGCATCTGTC ACGCTCTGCT CGTTGACACG GTAGTGAGTC	8520
GCTACATTCA TCATAACGAA CACATTGTCC TTGGTCTTAG TCTCAACCAC AATATCACTT	8580
TGCAACAAGC GCAACTGAAT CCGTGCTGCA ATCGAGTCAA TCCCAAAAGG CAAGCGAATA	8640
TGAATACCGC TATTAGCAAC CTTTTGGTAT TTCCCAAAGC GTTCAATAAT CGCCACCGAC	8700
TGCTGACGAA CCACATAAAC TGTAATCAGT GTGACTATCA CCAATAGGAG CACACAAACA	8760
ATCAGAAAAA TCATGAAAAA TATTGCCATA ATGGAACCTC CACAAGTATT TTTCTAGTAT	8820
TATAGCACAT TTAAAGAAGG CTGTGCCGTT TTTACTGCGA TTTTTCCTGA AATGTCAATA	8880
ATTAGAGGTG AATTGTCCTA TTGTCGTCCA ATCTCTTGCT AAAATAACTC TTTATAAAAG	8940
GCAATCGTTT CTTCTAAGGT TGGCATAAAT GGATTTCCTG GTGCGCAGGC ATCAATCAAG	9000
GCATCTTAG AAAGGTATTC AAAGTCGAAA TCTTTTCTT CAATACCAAG TTCAGTCAGT	9060
TTCTTAGGAA TACCTACTGT CTCAGAAAGC TTCTCAATCT CAGCAATCGC ATAATCGGCA	9120
CATTCTTGAT CTGATTTACC TTCTACATGA AGTCCCAAGG CTTTGGCAAC ATTGCGGAAA	9180
GCTTCTGGTA CACGTTTAGC ATTTTCACGT TCTATAACTG GTAGCAACAT GGCACAGCAC	9240
ACGG	9244

(2) INFORMATION FOR SEQ ID NO: 69:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 8898 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double

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(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 69:

GATCTGAACT TTATCATCAT AACTTAATTT CATAATAAAA ACACCCCAAA AGTTAGATTT	60
TTTCTGTCTA ACTTTTGGGG TGTAGTTCAG TCATTGGACT GACGTTTTTT TGTATGCTTA	120
TTTTGATTTG ATGTAGTTGA TACCATCTGC TTTTGGTGCG ACTGCTTTTC CAAAGAAGGC	180
TGCTAAGACA AGAATTGTCA AAACATAAGG TGCAATTTGA AGATAAACCG CTGGCACTCC	240
TTGTAGGAAC GGCAATTGAG AACCGATAAC AGCCAAACTT TGTGAAAGTC CAAAGAAGAG	300
ACTAGAAAGC ATAGCACCGA TTGGATTCCA TTTCCCAAAG ATCATCGCAG CAAGGGCGAT	360
AAATCCAGGT CCAACAATAG TTGTCACTGA GAAGTTAACT GAGATTGATT GCGCATAAAT	420
CGCTCCGCCA ATTCCACCTA GAAAACCTGA AATAATAACC CCTAAATATC TCATCTTGTA	480
GACGTTGATT CCCAAGGTAT CCGCTGCTTG AGGATGTTCA CCGACAGAGC GGAGACGAAG	540
ACCAAATTGA GTCTTAAAGA GAATAAACCA AGCAAGGAAT GAGAAGGCAA TCGCCAGATA	600
ACCAAGTAGA CTAGTTGACT TGAAGAAGAT ATCACCAATC ACTGGGATAT TTGCCAAGAC	660
TGGGAAATCA AAGCGTCCAA AAGTTTGACT TAGGTTGTCG GTTTGTCTCT TGTATATAAG	720
AACTTTAACT AAGAAAACAG CCAAGGCAGG CGCCATCAAG TTCAATACCG TACCGCTGAC	780
AACATGGTCT GCACGGAAAT GAACCGTCGC TGCTGCGTGG ATGATAGAGA AAACACTACC	840
AACCAATCCT GCTACAAGCA AGGATAGCCA TGGAGTTGCT GCTCCAAATT GTTCTGCAAA	900
TTCAAGGTTA AAGACAACTC CAGAAAAGGC ACCCATAACC ATAATTCCTT CAAGGCCAAC	960
GTTTACCACA CCACCACGTT CAGAGAAAAC ACCACCGATA CTTGTAAAGA TGAGAGGTGC	1020
TGAGTAAATC AGCATAGAAG ACACCAAGAG GGGGAGCAAG GTTATAATAG ACATCTTTAC	1080
TTACCTCCTT TAACTTGTTT TTTCGGTTTG ACAAAGCGTT CGATAAGGTA ATGAACACTG	1140
ACAAAGAAGA TAATAGACGC TGTTACAATG CTGACAAGCT CAGATGGTAC CTGCGCCGCA	1200
TTCATACCAG GAGCCCCAAC TTGGAGAACG CCAAATAGGA AGGCTGCAAA GAGTATACCA	1260
ATTGGTGAGT TGGCCGCAAG CAAACTAACC GCCATTCCGT TAAATCCGAT AGCTAATGAC	1320
GAACCTTGAA CATAGACGTT CTGGAAGGTT CCCAAACCTT CAACAGCTCC ACCAAGACCT	1380
GCCAAGGCAC CTGAAATAAT CATAGATAGG ATAATAGTCC GCTTGGCAGA AATACCAGCA	1440
TATCTGAAG CATGTGGATT AAGACCAACT GCACGGATTT CAAAACCAAG AGTTGTTTTTC	1500
TTGAGCATGA ACCAAATAAC TGCAACGGCA ATGATGGCAA AGAAAAATACC AATATTCATC	1560
CGTGAGTTAC CAGTCAACTC AGCCAACCAA GGTGTCTGAT AGGTTGCATT AGCCCCAACA	1620

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CGAATGGTCG AATCTGTACT TTGCATGAAG TCTTTAGGGA AAGCATGGAT AAAGGCATTC	1680
CCTACATACA AGACAATGTA GTTCATCATG ATGGTTACAA TAACCTCTGA CGTCCCTAGA	1740
TAGGCCCTAA GAATACCTGG AATCGCTCCG ACAATCCCAC CAGCAATCAA GGCAATCACG	1800
ATGGTTGCTA GAATCATCAA GGGACGGGGC ATATCTGGAT GCGACAGGGC AAACCAACCA	1860
CTGAGAATCC AACCTGCCAA AGCCTGACCA GGAAGTCCGA CGTTAAAGAA ACCAGCTCGA	1920
CTGGCAACGG CAAAACCAAG ACCAATCAAG ACCAGAGGAC CCATAGCACG GAAGATTTC	1980
CCAATCCCAC GCAGACTGCC AAAGGCTGTA TAGAACAATT CTTCGTAGCC CCAAATAGCA	2040
TCATAACCGA AGATCCACAT GACAATGGCT CCGAGTAAAA TTCCTAGGAA TACAGAAATC	2100
AAGGGAACCG AAATTGTGTG TAATTTTTTA GACATCACTC TTCTCCTTTC CCAAGTTTCC	2160
ACCAGCCATC AAGACACCAA GTTCTTGTTT ATTGTTGTTT TCTGGTGATA CAATACCTTG	2220
AATCTTACCA TCGTGGATAA CGGCAATACG GTCTGAGACG TTTAAATCT CATCCAATTC	2280
AAAGCTGACA ACAAGGACAG CCTTGCCATT ATCACGCTCT TCAATCAAGC GTTTGTGGAT	2340
ATACTCAATG GCACCGACAT CCAACCCACG AGTTGGCTGG CTAACGATAA GGAGATCAGG	2400
ATCTCGATCA ATTTACAGAG CAATAATTGC TTTTGTGA TTTCTCCTG AGAGTGCAGC	2460
TGCAGGAAT AATTCATG CAGCGGAAC ATCAAATCT TCCATCAGCT TTTTAGCATA	2520
AGAAGTAATA TTTGAATAAT TCAAAATTC ATTTTACTA TGTGGTTCTT TATAGTAGGT	2580
TTGAAGGGCA ATATTTTCAG ATATCATCAT TTCCAAAATC AAGCCATCAC GGTGACGGTC	2640
TTCTGGAACG TGCCCAACAC TTAGTTCTGT AATCTGACGT GGGTGCAAGC CTACAATTGA	2700
ATCTCCTTTT AGCTCAATGC TACCAGATTC AACCTTACGA AGACCTGTAA TGGCTTGAAT	2760
CAGTTCAGAC TGACCATTTC CATCAATCCC CGCAATACCA ACAATCTCTC CAGCACGAAC	2820
ATCCAAGGAC AGATTTTAA CAGCTGGAAC ACCACGGTTT TCATTGACCA CCAAATCTTT	2880
GATAGACAAA ACCACTTCTT TTGGTTTAGA GGCTTGCTTC TCTGTTTTAA AGGAAACAGA	2940
ACGTCCTACC ATCATTTCCG CCAAATCAGC ATTGGTAGCC CCTGCAATTT CAACGGTTTC	3000
AATTGATTTT CCACGACGGA TAACTGTAAC ACGGTCAGAA ACTGCTCGAA TTTTCATCAA	3060
TTTGTGGGTA ATCAAGATAA TTGATTTTCC TTCTTTGACA AGATTTTCA TAATAGCCAT	3120
CAACTCATCA ATTTCTGATG GAGTCAAAAC AGCCGTGGT TCGTCAAAGA TAAGGATATC	3180
AGCCCCCGA TAAAGTGTTT TTAAAATTTT TACACGTTGT TGGGCTCCAA CTGAGATATC	3240
TGCTACCTTG GCAGAAGGT CAACAGCTAA GCCATAACGT TCAGAAAGAG CTTGATTTTC	3300
TTTGCTAGCT CCAGCGATAT CTAGCACACC ATTTTATGTC AATTCACTAC CTAATATGAT	3360

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GTTTTTCAGCC	ACTGTGAAGG	CTTCAACCAA	CATAAAGTGC	TGGTGAACCA	TCCCGATTCC	3420
CAAGCTAGCT	GCTTTAGATG	GGGAGTCGAG	ATTGACAAC	TGACCGTTGA	CCGCGATTTC	3480
ACCACTAGTT	GGTTCAGAA	GGCCTGCTAA	CATGTTTCATT	AGCGTGGACT	TACCAGCCCC	3540
ATTTTCTCCT	AAAAGTGCAT	GAATTTACCC	TTTTCGTAGG	TGCAAGTTGA	TTTTGTCTGT	3600
GGCAACAAAT	CCACCAAACA	CCTTGGTAAT	ATCACGCATC	TCAATGACAT	TTTCGTGTGC	3660
CATGTGCTCT	TCCTTTCAGA	GTCTTATTTT	ATTTCAATAA	AACTTGCTAG	TTTGTCTAGT	3720
AGCAAGCTTT	ACTTAGACAA	AATGACTTTG	TCTCAACTCT	TAAAAAGCG	GCCCTTGCC	3780
GCTTCCTAAG	AAATGACTTC	CATCCATTAT	TTTTCAGGAA	CTTTTACGCT	TCCATCAAGG	3840
ATTTTAGCTT	TTGCATCTTC	GACAGCTTTT	TTACCTTCTT	CTGAAAGGTT	TGTTACTGCC	3900
AAGTCAACCC	CTTTATCCTT	CAATGAGTAA	ACGATCACTT	GACCGCCAGG	GAATTCTCCT	3960
CTTTCTGCCT	TGTTAGAAAT	ATCTTTTACA	GTGTACCAA	CTTGTTCCTAA	AGTAGATACA	4020
AGAACAAAGT	TTGATTCTTT	GCCATCTTTA	GAAGTGATT	TACCTTCTGC	TTCTTGGTCA	4080
CGATCAACAC	CGATAACCCA	AACTTTTTCA	TTTTCAGGAC	GGCTTTCGTT	GAGAGATTTT	4140
GCCTCTGCAA	AGACACCTGC	ACCTGTACCA	CCAGCTACTT	GGTAAACAAT	ATCTGCACCG	4200
GCTGCGTATT	GTGCGGCTGC	AATTGTTTTA	CCTTTAGCCG	CATCACCAAA	TGAACCAGCG	4260
TAGTCAACTT	GGACTTTGAT	AGATGGGTCT	ACTGACGCAA	CACCAGCCTT	GAATCCTGCT	4320
TCAAAACGAG	AGATAACTTC	AGATTCGATA	CCACCTACAA	AACCAACTTG	TTTTGTCTTA	4380
GTTGTTTTTG	CTGCAGCCAC	ACCTGCAAGG	TAACCTGACT	CATTATCAGC	GAAAGTTACG	4440
CTCGCAACAT	TCTTTTGGTC	TTTAATCACA	TCATCAATCA	AGACATAGTT	CAAGTCAGTG	4500
TGTTCTTTTG	CTGCATCTTT	AACTGCATTA	TTAAGGGCAA	AACCAACACC	GAAGATTAGG	4560
TTGTAACTTC	CAGCCGCTTG	TTGCAAGTTG	TTAGCGTAGT	CAGCTTCACT	TGTTGATTGG	4620
AAGTAAGTGA	AACCGTTATC	TTTGTAAAGA	TTGTGTCTCT	TACCCCAAGC	CTGCAAACCT	4680
TCCCAAGCTG	ATTGGTTGAA	TGATTTGTCA	TCAACACCAC	CAGTATCAGT	GACGATTGCT	4740
GCTTTTGTCT	TCACATCAGA	AGATGAAGCT	GCGTTACGAG	AAGAGCGGTT	ACCACATGCA	4800
GCAAGTCCAA	CTGCTGCCAC	TGCAACTAGG	CCAAGACCTA	GCCATTTGTT	CTTGTTCATT	4860
ACTGAACCTC	CTAAATAAGA	TGTGCAACGA	TGTTGCAAGT	ATGGATTGGT	TGGCCACAAG	4920
GACCGTGCCA	CTCAGAGAGC	GACTCAGACT	AGTTTAAAGT	TGTAAAAGAG	TATGGAAGTA	4980
ATTCCCCGAC	CGTCATCTCG	ACCGTCGATT	TATCTTTTGC	GACTAAGGTC	ACTTTTAGAT	5040
CTTGTTCAAA	AAATTCAGCC	ATCACTTGGC	GACAAGCACC	ACATGGCGAG	ATCGGTTTTT	5100
CAGTTTGACC	ATAGACAATC	AATTCTGAAA	ATTCTCTTTG	GCCTTCAGAT	ATAGCCTTAA	5160

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AAATAGCTGT TCTCTCACCG CAATTGGTCA AAGGATAGCT AGCATTTTCA ATATTCACTC	5220
CCGTGTAAAC ACTTCCGTCT TTAGCTACTA AAAGTCTCC GATAGGAAAG TGAGAATAGG	5280
GGACATAGGC ATGTTTGCTG GTTTC AATTG CCAGTTCAAT CAACTCAGTA GTCGCCATCT	5340
GCCAATTCTC CTTTAAAAAT AGCTACCCCA GCTGACGTTT CGATACGGGT CGCACCTGCT	5400
TCGACAAAGG CAAGAGCATC TGCATAAGAA CGAGCTCCAC CGGCGGCCTT GACACCCATA	5460
TCAGATCCAA CTGTTTCACG CATTAATGTA ACATCTGCTA TCGTAGCACC ACCAGTTGAA	5520
AAGCCAGTAG ATGTTTGGAC AAAGTCAGCC CCAGCTTTT GGGCCAATTG GCAAACAACA	5580
ACTTTTCTT GGTCTGTCAG AAGGCAAGCT TCAATAATGA CTTTCACTAA CTTATCACCA	5640
CTTGCTTCCA CTACTGCGCG AATATCTGAC TCAACCAAGG CTAAATTACC TGATTGAGA	5700
GCTCCAACAT TGATCACCAT ATCAATCTCA TCTGCACCAT TTTGGATAGC TTCTTTTGTC	5760
TCAAATGCTT TCACGGCTGA AGTTGTTGCT CCCAAAGGGA AACCTACTAC TGTGCAAACC	5820
TTAACATCTG TGCCTTCAAG TCCTTTTTTA GCATGTTC A CCCAGGTCGG ATTAACGCAA	5880
ACACTGGCAA AGTCATACTC TCTAGCCTCA GACAACAAAC TATCAATTG TTTTTCTTT	5940
GCATCTTGTT TTAAGAGCGT ATGATCTATA TATTTATTTA ATTTCAATTC GGTTTTCCCT	6000
CCATTTAGGA GATGATTCT ACAATTTTAC GGATTTT TTT CACTTCATCA CTTATTTTAA	6060
CACATTTTG GAAATCTGTA ACTAGTTGAG GTGGAATTTT TTCATTTGTG TATACTTTTG	6120
CAACAATTTT ACCCTTTTGA ACGGAGTCTC CAATCTTCTT TTCAAAAACA ATTCCTGTTT	6180
CATAGTCCAA GGCATCAGAC TTAAGTGCAC GACCAGCACC CAGCCTCATG GCATAAGAC	6240
CAAAGTCCAT AGCTGGAAGA GCTGAAATGA CACCCGTTT CTGAGCAGGG ATTTCCACCA	6300
CATGAGCTAC ATTTACAGGA CGATAGAGGT CTTC AAGTC TCCACCTTGG GCTTGACCA	6360
TTTCCTCAA CTTAGCCAGT GCTTGACCAT TCTCAAGATG TTGGTGAAGT TCTTCAACAG	6420
TTTTGTAAAC ATTTGCCAAA CCAAGCATAA TTTGAGCCAA TTCACAAATA AAGTGGGTAA	6480
TATCCTGACG TCCTTGACCT TGCAAAATCT CCAATGCTT AAGGATTTCC AGACGATTTT	6540
CAATCGCTCG TCCCAAAGGC TGGCTCATAT CCGTAATCAC TGCTACTGTC TTCCGTCCAA	6600
CAACCTTACC AAGATCTACC ATAGTTTGAG CCAACTCACG CGCCTCATCA ACCGTCTTCA	6660
TGAAGGCACC CTCACCGACA GTCACGTCTA GCAAAATAGC ATCCGCCCCCT GCCGCAATTT	6720
TCTTGCTCAT CACCGAAGTC GCAATCAAAG GAATCGTGTC GACAGTTGCG GTCACATCAC	6780
GAAGGGCATA GAGAAGCTTA TCTGCTTTGA CCAGCTGGTC TGATTGCCCA ATGACAGATA	6840
CTCCAATATC CTGAACCTGA CGAATAAAAT CCTCTTGACT ACGTTCTACT TGATAGCCCT	6900

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TAATGGACTC CAATTTATCA ATTGTTCCGC CTGTATGGCC AAGACCACGA CCACTCATT	6960
TTGCTACAGG CACACCGAAG CTAGCAACAA GAGGAGCTAA AATCAAGGTT ACCTTATCGC	7020
CGACACCACC AGTAGAATGC TTGTCAACTT TCACACCATC AATGGCTGAC AGGTCAAAC	7080
CTTGCCAGT CTTAACCATA TTCATCGTTA AATCAGAGAT TTCTCGAGTC GTCATTCCTT	7140
TAAAATAAAC AGCCATAGCA AAGGCAGACA TCTGATAATC AGGAACAGTT CCTGATACAT	7200
AGCCTTCTAT CAGCCATTCA ATTTCACTTG AAGTCAGTTC TTGACCGTCT CGTTTTTTTT	7260
GGATTAAATC AACTGCTCTC ATTCTTTCAC ACTTCTAAGG ATATAGTATC CCTTGTCTTT	7320
TTTAAGGATT TCACAATTGC CAAACACATC TTCCATCTTA GACTTGGCAC TTGGAGCTCC	7380
TTGTTTTTTC TGGATGACGA TGGTCAAATC TCCACCAATT TCCAAGAAAT CTTTACTTTT	7440
CTCGATGATT TCATGAACGA CTTGCTTGCC CGCACGGATA GGAGGATGG AAATGACATG	7500
GTCAAATCGC CCTTGAATC TTGCATAAAT ATTAGATTGA AATATCGTCG CTTTGCATT	7560
ATTTTTTTCA GCATTTCTCT GAGCTAAATC CAGGGCACGA GTGTTAATAT CAACCATGGT	7620
CGCCTGAACT CCGTAAACCT TGACCAAGGA CAAACCTAAT GGACCATAAC CACAGCCTAC	7680
ATCTAGGACT GTCTCTCCTT GGTGACATC CAGACACTTG AGCAAGAGTT GACTTCCAAA	7740
GTCAACCATT TTCTTGCTAA AAACACCCGC ATCTGTCAAA AAAGTCATTT TTTCTCCAA	7800
CAAGTCCACT CTCAACTCAT GAATGTCGTG AGCAGCGTCA GGATTTTCTG CATAGTACAT	7860
TTTACTCATG AACTATTTT ACCATAATTT GACTCAAATT GTAAATCGTT TACAAATTGA	7920
TAATAAAACG AAAAAGACCG AAGAAAGCAA GTCACGAAGC CATTTTCTTC AATCTCTTTC	7980
AACACTTATA AATAATAAAC CATTTAGAAC TATAAATATC ACAGTCCAGA TAAAAACAA	8040
AAGTTTATCA TCTATAATCA GGCAGATTAT TATTTCTATT GCTTAACCTT AAAATACTTT	8100
ATTATCAACA AAATTCCTAA CAAAATGTTT AGATAAAAGC CCAACTGATA CGTTTATGTC	8160
AGGATTTCCA AACTGTCCA AAGTCGTATC AAATCTTCTA GTGACATGTG GAAGAAATAA	8220
CCCTCTGTCG CAATCCGTAG GACTAAAAAG CAATAACTAC CCGCAGCAAT CCATTTCGTC	8280
CATCGTTTTT TAGTAAGAAA GCAATTAAGA ACGAACAAAT AAAGACAGCT GTTACAATAG	8340
CATGTTCCAT CAAAAAGTA AAACCGTAAT AGGTTTCCAC AAAGCATCTA CCATTATCTG	8400
CATTGGTTCC TTTTATAAAA GGTAAAGCAA AACTTAAAT AAAACAGAGT TCCAATATGT	8460
AACGTTTAA GATTTTCATA GTACACCTCC TATAAGTTGT GAACTAAAAA GCCCCCTTTA	8520
TAAGCTTATA AATCAGTAGA ATCTATCTCC TATTTTCATCA ATAAATGAT CACTTATACT	8580
ATATAACATT GACTTACCAC ATTCAAGAAA CCGCTTTATT TTTTATAGCTT TTTATGGTAT	8640
GATAGACAAA ATATCTAGGG GAAAACAAAT GACCAACGAA TTTTACATT TTGAAAAAT	8700

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CAGCCGCCAG ACTTGGCAAT CTTTACATCG AAAGACAACA CCTCCTTTGA CAGAAGAAGA	8760
ATTGGAATCT ATCAAGAGTT TTAATGACCA AATCAGTCTC CAAGACGTTA CAGATATCTA	8820
TCTCCCTTG GCTCATTTGA TTCAGATTTA CAAGCGAACT AAGGAAGATT TAGCCTTTTC	8880
AAAAGGAATT TTCCTCCA	8898

(2) INFORMATION FOR SEQ ID NO: 70:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 13188 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 70:

TATCTTAACG aGGATTGGGT TTATCGTCAG TCTTATTGCC CTAATTGTGG GAACAATCCC	60
TTAAATCATT TTGAAAATAA TCGGCCTGTA GCAGATTTTT ACTGTAATCA TTGTAGTGAG	120
GAGTTTGAAC TAAAGAGCAA AAAAGGAAAT TTTTCATCAA CAATCAATGA TGGTGCTTAT	180
GCAACGATGA TGAAGCGTGT GCAGGCAGAT AATAATCCTA ATTTCTTTTT TTAACTTAC	240
ACAAAAAATT TTGAGGTAAA TAACTTTCTT GTCCTCCGA AGCAATTTGT TACACCGAAA	300
TCGATTATTC AAAGAAAACC ACTTGCACCA ACTGCTAGAC GAGCAGGTTG GATTGGTTGT	360
AACATTGATT TATCACAAGT ACCTTCTAAA GGAAGGATAT TTCTTGTGCA AGATGGACAA	420
GTTAGAGATC CAGAAAAAGT TACAAAAGAA TTTAAGCAAG GTTTATTTTT AAGGAAGAGC	480
TCTCTGTCAT CAAGAGGTTG GACAATAGAA ATTCTAAATT GTATAGATAA GATAGAGGGT	540
TCAGAATTTA CCCTTGAAGA TATGTATCGT TTTGAAAGTG ACCTAAAAAA TATCTTTGTT	600
AAGAACAATC ATATCAAAGA AAAGATTAGG CAACAGCTTC AAATATTAAG AGACAAAGAA	660
ATAATAGAAT TTAAAGGTAG AGGAAAGTAT CGGAAATTAT GAAAACGAAA CAACTTGTTG	720
CATCAGAAGA GGTGTATGAT TTCTTAAAAG TCATCTGGCC TGATTATGAA ACTGAAAGCC	780
GTTACGATAA CCTAAGTTTA ATCGTCTGTA CCTATCAGA TCCCGATTGT GTGAGATGGT	840
TATCTGAAAA TATGAAATTT GGTGACGAAA AACAACAGC TTTGATGAAG GAAAAATATG	900
GGTGGGAAGT AGGAGATAAA TTGCCAGAGT GGCTACATAG CTCCTATCAT AGATTATTGT	960
TAATAGGTGA ATTATTGGAA AGCAATCTAA AACTGAAAA GTATACAGTA GAAATTACAG	1020
AAACTTTATC ACGTTTAGTA AGTATAGAGG CTGAAAATCC AGATGAAGCC GAACGACTTG	1080
TAAGAGAAAA GTATAAGAGT TGTGAAATG TTCTTGATGC AGATGATTTT CAGGACTATG	1140

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ACACTAGCAT	ATATGAATAG	GTAGATGTTT	TTATTTTGTG	AACAAAAAAG	AGGCTCGCAC 1200
CTCTTTTCT	TATTTCTTTT	TATGATTTAA	TACGGCATTG	AGGACAATAG	CGAGTAGGCT 1260
GGCTACGACG	ATTCCGTTTG	AGAAGAACAT	TTGGAAGGCT	GTCGGCATGC	TGACAAAAGAG 1320
ATTACTGTTG	TTGAGACCGA	CACCTGCAGC	GATTGAAACA	GCTGCGATAA	GGAAGTTGTG 1380
TTCATTTGTTA	GCAAAGTCAA	CACGGGCGAG	GATTTCATC	CCTTGAATTG	ATACAAAACC 1440
AAACATTACC	AGCATGGCAC	CACCGAGGAC	GGAGCTTGGA	ATGATTTGGG	CAAGGGCGCC 1500
AAACTTAGGA	AGCAGTCCAA	GGAGAACCAG	GAAACCAGCT	GCGTAGTAGA	TTGGCAGGCG 1560
TTTTTTGATG	CCTGACAATT	TAACCAAACC	AACGTTTTGT	GAAAATCCGG	TGTAAGGGAA 1620
GGTGTAAAG	ATTCCTCCGA	GAAGTACGGC	CAAACCTTCT	GCGCGGTATC	CGTTGCGAAG 1680
GCGCGTGCTG	TCGATTGGAT	CCTTTGTGAT	ATCAGACAAG	GCCAGATAAA	CACCAGTTGA 1740
CTCAACCATA	GACACCGTTG	CGATGATACA	CATCATGACA	ATAGATGAGA	TTTCAAAGGT 1800
TGGCATCCCA	AAGTAGAGTG	GAGTTGGGAC	ATGGACAAGT	GGAGCTACCG	CAACAGGAGA 1860
GAAGTCCACC	AAGCCCATAG	TAGCAGCAAT	GGCAGTTCCA	ACAACCAGAC	CAATCAAAAT 1920
AGAGATAGAC	TTGATAAATC	CTTTGGTAAA	GATGTTGATC	AAGAGGATAA	TCAGAACAGT 1980
AATAGCTGCA	AGCAAGAGAC	TTTGACCAGT	TGGCTCTGGA	ACGTTATTTT	CCATATTTCC 2040
AATAGCGACA	GGGATCAAGG	TTAAACCAAT	CGTGGTAATA	ACAGATCCTG	TTACGATAGA 2100
TGGGAAGAGA	TTGGCTACTT	TTGAGAAGAT	GCCTGAAACA	AGAACCACGT	AAATCCCAGA 2160
TGCGATAAGG	GCACCAAACA	TAGCGCCACT	ACCATGGCTT	TGCCCAATCA	TAATCAAGGG 2220
AGCGACCGAC	TGGAATGCAA	CTCCAAGAAC	GACTGGGAGT	CCAATCCCAA	AGTATTTGTT 2280
GAGTTGGAGT	TGGAGGAAGG	TTGCCACCCC	ACACATGAAG	ATATCTGTAG	AAATCAGGTA 2340
GGTCAACTGC	TCAGCTGAAT	AGCCAAGGGC	TGTCGCAATC	ATGATGGGAA	CCAGGATAGA 2400
TCCTGAGTAC	ATGGCTAGTA	AGTGCTGCAA	GCCAAGAACG	GCTGCTTGCG	AGTGTTTTTC 2460
TTGAGTTTGC	ATTAGAGATC	TGCCTCCTTA	AATACGACTT	GACCATTTTC	AAAACAATCC 2520
AAACGAGCAA	GTGATAGGAC	AGGGTAGCCT	GCTTTTTC	GCAAATCACG	ACCATCTTGG 2580
AAGGATTTCT	CAATCACGAT	ACCGATAGCT	TGGACTGTGG	CACCGGCCTG	TTCGATGATT 2640
TGAATCAAGC	CTTTAGCAGC	TTGGCCATTA	GCAAGGAAAT	CGTCGATAAT	CAAAACCTTG 2700
TCCTCTGGTG	AGAGGAATTT	TTAGCGATA	GAAACGGTGC	TGGTCACCTG	CTTGGTAAAG 2760
GAGTAGACTT	GAGCAGTTAA	GATGCCTTCG	TTTCATGGTGA	TGTTCTTAGC	TTTTTTGGCG 2820
AAAATCATGG	GAACGTTTAA	GGCTTCAGCT	GTAAAAACGG	CTGGGGCAAT	ACCCGACGCT 2880
TCAATGGTTA	CGACCTTGGT	AATGCCAGTA	GTAGCAAATT	TTTCCGCAAA	AACCTTACCA 2940

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ATCTCTCGCA TCAAGCTAAA GTCAACTTGG TGGGTAAAA AGGAATCTAC CTTGAGGATG	3000
TTATCACCCA AGATATGCCC ATCCTTGAGG ATGCGCTCTT CTAATAATTT CATAAGACCT	3060
CCTAAAGTCT AAAAGTTAAT TTACTTGTG TTTAAATATT TCTATAGTGA TCCCTTTTGC	3120
TAATACTATA TATTTGATAA AACTATTACG AGCGAAGCGA GTCTTATCAA ATATTTCCCG	3180
TTGTAGTGGT ATCATAGACA ATAATCTTGT TATTGTCTAT GACGGGATTT TTGAGAGTAA	3240
AATAGTTCGG GGAACATTTT TAGCCTAAGC CTAGAAATGA AAGAGCTAGG GGCTCAAAAA	3300
TTAGGGATGA AATTCCTGG ATTCCTGAAA TTATTCACAG GATAATTTCA CCTCCCGTCC	3360
GCACTAATTA AGGGAAATAT TAAAAAAGA CCTACTTAAT CTCTAAGTAA GTCCCTTAAA	3420
TAGACATGGC AAAAACGGCC ATATCTCACT GCTGACTTAC TTATTGTTAG GTGTTCCGGC	3480
ACCTTGTTAGA AACGTCGTGC CAATTCACGA CATAAACAAAG TAAACGATA TTCAATTTTA	3540
AATAGGCTTG AGCCAATGTT TTTATTTTAC ACTAAATAAC TTTAGAAATC AACTATTTTG	3600
TTAGTGTTTT GGTTTAAAAA ACGAACAAAA AGAAGAGAGG GTGAACAAAA ACTCCATTGT	3660
AAGCTAACAG TTATACTAAA TGAAAATCAA AGAGCAAACT AGGAAGCTAT CCACAACCTC	3720
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CTTTTCCCAA TTTTATTAT TCTACTCGCT AAATCTTAAA AAATAGCCAT CTGGATCCAA	3960
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TATGCCAAAG GAGAGATTGA CTCCACGACC AAAGGGATAG GTCAGTTCAG CTAGTTGATC	4140
CTTTGTCCC TCCTCTAACA TTAGTTGACA CTCCTCAAGA GAAAGAGAAA GTTTTCTTCT	4200
GGACGTTGGT ATTCAATCCT AAAACCCAGT AAACCACAGT AGAAGGACCG GGAAGTTCG	4260
ATATTGATA CAAGCAACTC GGAATGACC GCATTGTAGT CCATATAGAA AATCCTTACA	4320
AGTCAATTC CAAGACAATC GGTGTATGGT CTTGGCGAGC ACCTGAGTCA ATCATATCAG	4380
ATTTAGTGAC CTTGTCAGCG ATACGGTTAC TTGTGAGCCA GTAGTCGATT CTCCAGCCTG	4440
TATTGTTGAT TTTAGAAGTT TTGCTGCGTT GTGCCACCA AGTGTAGCGT TCAGGAACAT	4500
CGCCATGAAC ATGGCGGAAG GTGTCTGTAA ATCCAGTTGC CAAAAGGTTG GTAAATCCAG	4560
CACGTCCTC GTCAGTAAAT CCAGGTGAAC GGCGGTTGCT AGCAGGATTT GCAAGGTCGA	4620
TTTCATTGTG GGCTACGTTG TAGTCACCG TCGCAAGGAC TGGTTTTTCT TTGTCTAGTT	4680

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GGGAAGAGCG CCACGTGTTT TCGTAGCCTG GGAAGAGTTC TTCTAAAATT TCCACGTGTT	4980
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CAGCGACCAA GGTTTGTAGG ACTTCTTGGG ACAATTTGGC ACGAGCTGAG TCACTAGTTA	5100
GGGCAGCGTT TAGGGAATCA ATATTCCATG AGATAAGTTT CATAAAGTTA CCTTTTTCAT	5160
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TAGCCAATAT CTTTATTGCT GAATATGACA AGGGTGCTGT TACAGTCGTA ACTTATGAAT	6180
AAGAAAAACC TGGGGTCTTG TACTCTTCGA AAATCTCTTC AAACCGCGTC AACGTCGCCT	6240
TGCCGTATGT AGGTTACTGA CTTGCTCAGT TCTATCTACA ACCTCAAAGC AGTGCTTTGA	6300
GCAGCCTGCG GCTAGTTTCC TAGTTTGCTC TTTGATTTTC ATTGAGTATT GGCCTCAGGT	6360
TTCCATTTGC AATCAGAAAG GGATTTTATG TCCATTATTC AAAAACTTTG GTGGTTTTTC	6420
AAGTTAGAAA AACGCCGTTA TCTAGTCGGA ATTGTGGCCC TGATCTTGGT TTCCGTCCTC	6480

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GCCTATACGA CTAGTCGCCT AGGGAGAAAG ACTCATAAGG CCTTTGGCGA ATCCCAAGCT	6960
GCTTTTCTG AACTCAATAA CAAGGTACAG GAGTCCGTAT CAGGTATCAA AGTGACCAAG	7020
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TTGGAAATGA AAGGAGAAGA AGATGCAGAA TAAACAAGAA CAATGGACTG TATTGAAGCG	8160
CTTGATGTCT TATCTCAAGC CTTATGGACT CCTGACCTTT TTGGCACTCA GTTTTCTCCT	8220

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AGCGACGACG GTCATTAAAA GTGTCATACC CCTCGTGGCT TCCCACCTTA TCGACCAGTA	8280
TCTCAGCAAT CTTAACCAAC TAGCCGTTAC CGTTTTGCTG GTCTACTATG GTCTCTACAT	8340
CCTACAAACT GTAGTTCAGT ATGTCGGCAA TCTTCTCTTT GCGCGCGTGT CTTACAGTAT	8400
TGTTAGGGAT ATTCGTCGGG ATGCCTTTGC CAATATGGAG AAACCTGGGCA TGTCTTACTT	8460
TGACAAGACG CCAGCAGGTT CTATCGTTTC TCGTTTGACC AACGATACCG AGACGATTAG	8520
TGATATGTTT TCTGGGATTT TATCCAGCTT TATCTCAGCA GTTTTTATCT TTCTGACAAC	8580
CCTTTATACC ATGTTGGTGC TGGATTTTCG TTTGACGGCT TTAGTCTTGC TCTTCTTCC	8640
TTTGATTTTC CTTTTGGTCA ATCTCTATCG AAAAAAGTCA GTGAAAATCA TCGAGAAAAC	8700
CAGAAGTCTC TTGTCAGATA TCAATAGTAA GCTGGCAGAG AATATCGAGG GAATCAGGAT	8760
TATTCAGGCC TTTAATCAAG AGAAGCGCCT GCAGGCAGAA TTTGATGAAA TCAACCAAGA	8820
ACACTTGGTC TACGCCAACC GTTCTGTAGC CTGGATGCC CTCTTTTGA GACCTGCCAT	8880
GAGTTTGCTG AAACCTCTAG GCTATGCAGT CTGATGGCC TACTTTGGCT ACCGTGGTTT	8940
TTCTATCGGG ATAACGGTCG GGACCATGTA TGCCTTTATC CAGTACATCA ACCGCCTTTT	9000
TGACCCCTTG ATTGAGGTGA CGCAAACTT TTCAACTCTG CAAACGGCTA TGGTTTCTGC	9060
AGGTCGTGTC TTTGCCCTGA TAGACGAGAG GACCTATGAA CCTCTCAAG AAAATGGGCA	9120
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ACATCCGATT CTGGATGACA TTTCTTTCTC TGTTAATAAG GGTGAAACCA TTGCCTTTGT	9240
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CCGCCTTTCT ACTATTCAAG ATGCCAACTG CATCTATGTC TTGGATAAGG GACGCATTAT	9780
CGAGAGTGGA ACCCATGAGG AACTCTTGGC TCTGGGAGGA ACCTATCACA AGATGTATAG	9840
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ATCTGCAATC TCAAAGCTGT ACTTTGATTT TCATTGAGTA CTAGAAGGAA ATCCTTCAAA	9960
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GTATAATAAA AACAAAGGAG AACAGCATGC TGAAATGGGA AGACTTGCCT GTGGAAATGA	10080
AATCAAGCGA GGTGAGTCT TACTACCAGC TTGTCTCTAA AAGGAAGGGT TCGCTGATTT	10140
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AGCGTGAGAC CCAGTACAAC CGTCGGTTCA AGATTTGGAA GTTTCGTACC ATGGTGACGG	10320
ATGCGGATAA AAAAGGAAAGT CTGGTGACTT CTGCTAACGA TAGCCGCATT ACCAAGGTTG	10380
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GTGAGATGTC CTTTGTCTGGT ACACGACCTG AAGTGCCACG TTATACAGAG CAGTATAGCC	10500
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GCGTTTGGGA AGTGGGACCT GGTGATGAAG TCATCGTTCC AGCCATGACC TATACGGCTT	11040
CATGTAGTGT CATTACGCAC GTGGGAGCAA CCCCTGTCAT GGTGGATATC CAAGCAGATA	11100
CGTTTGAGAT GGAATATGAC CTGCTTGAGC AAGCTATCAC TGAGAAAACCT AAGGTGATTA	11160
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AAAAACGTGA CTTCTTTACC GCTTCAAGCA AGTGGCAAAA GGCCTTTAAC CGTATTGTCA	11280
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GAAGTGCGAC TTGGAAAGCC AATCCAGTGA TTGATGACGA AGAGATGTAC AAGGAATTCC	11460
AAATCCTTTC CCTTCACGGG CAAACTAAGG ATGCTCTTGC CAAGATGCAA CTGGGGTCAT	11520
GGGAATACGA TATCGTTACA CCAGCCTATA AGTGCAACAT GACCGATATC ATGGCTTCAC	11580
TTGGTTTGGT ACAATTGGAC CGCTATCCAA GTTTGTTGCA ACGCCGTAAG GACATTGTGG	11640
ACCGCTATGA TAGTGGTTTT GCAGGTTCTC GCATCCATCC TTTGGCACAC AAGACTGAAA	11700
CTGTCGAATC TTCACGCCAC CTCTACATCA CCCGTGTAGA AGGAGCAAGC CTAGAAGAAC	11760

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GCAACCTCAT CATCCAAGAA TTGGCTAAAG CAGGAATTGC AAGTAATGTT CACTACAAAC	11820
CGCTTCCTCT CTTGACAGCC TATAAGAATC TTGGATTTGA TATGACGAAC TATCCTAAGG	11880
CCTATGCCTT CTTTGAGAAT GAAATTACCC TCCCTCTTCA TACTAAATTA AGCGATGAAG	11940
AAGTAGACTA TATCATTGAG ACTTTCAAAA CAGTTTCTGA AAAAGTGCTA ACTTTATCAA	12000
AAAAATGACA AACTACAGTC AAGCGAAAGT GATCCTGCCC CTAAAAAGTC TAATTGAGTG	12060
TAAAACTGT TGTTTTCAAT TGATAATAGT TTACACCTGT AGTTGAGGCC CCTTTCTCCT	12120
CAGAGAGAGA ATTTTATAG GATTTTCCTT TCTTGTGGGA GTCCCGTGGT TTGAAATAAG	12180
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GTAGATATAG TAAAATGAAA TGAGAATAGG ACAAATTGAT CGGGACAGTC AAATCGATTT	12900
CTAACATGT TTTAGAAGTA GAGGTGTAAT ATTTTAGTTT CAGTCTACTA TAGAACTGAC	12960
CAAGTCAGTA ACCTAGACTT AGGGCAAGGC GGCAGTACC TAGTTTGAAG AGATTTCCGA	13020
AGAGTATAAA TTTTAATATT TTCTTGTTT ATTCCTTGAC AATTCAATTT GGAAAATATA	13080
TGATAAAGAT AATGACAGCG GTGTCATTCT ATCTATTTTA AGAAAAGTAA TAATCAATTG	13140
TTAAAAATAG TAAAAAATT GGAGGTTCTG ATGAAATATT TTGTTCCG	13188

(2) INFORMATION FOR SEQ ID NO: 71:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 32768 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 71:

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AACGAGTGCA TCAGTCTCAG CAAGCACCAG TGCCTCGGCC TCAGCAAGCA CCAGCGCGTC	60
TGAATCCGCA TCAACCAGTG CCTCAGCTTC AGCAAGTACC TCAGCATCTG AATCAGCATC	120
AACAAGTGCA TCGGCTTCAG CAAGCACAAG TGCTTCAGCC TCAGCAAGTA TCTCAGCGTC	180
TGAATCGGCA TCAACGAGTG CGTCCGCTTC AGCAAGTACT AGCGCCTCAG CATCAGCGTC	240
AACAAGTGCT TCGGCTTCAG CGTCAACGAG TGCCTCTGAG TCAGCATCAA CGAGTACGTC	300
AGCCTCAGCA AGCACATCAG CTTCTGAATC TGCATCAACC AGTGCGTCAG CCTCAGCATC	360
GACAAGCGCC TCAGCTTCAG CAAGTACCAG TGCCTCAGCC TCAGCAAGTA CCAGTGCTTC	420
AGCCTCAGCG TCGACAAGTG CGTCGGCCTC AACCAGTGCA TCTGAATCGG CATCAACCAG	480
TGCGTCAGCC TCAGCAAGTA CTAGCGCCTC AGCCTCAGCA TCAACGAGTG CGTCCGCTTC	540
AGCAAGTACT AGTGATCAG CATCAGCATC AACGAGTGCA TCGGCTTCAG CAAGTACCAG	600
CGCCTCAGCT TCAGCAAGCA CCAGTGCGTC AGCCTCAGCA AGTACCAGCG CCTCAGCCTC	660
AGCAAGCACC AGTGCTCAG CTTAGCAAG TACCAGTGCG TCAGCCTCAG CGTCGACAAG	720
TGCGTCGGCT TCAGCAAGTA CCTCAGCGTC TGAATCAGCA TCAACGAGTG CATCAGCTTC	780
AGCATCAACA AGTGCTTCAG CTTAGCAAG TATCTCAGCG TCTGAATCGG CATCAACGAG	840
TGCGTCCGCT TCAGCAAGTA CTAGCGCCTC AGCATCAGCG TCAACAAGTG CTTGCGCTTC	900
AGCGTCAACG AGTGCGTCTG AGTCAGCATC AACGAGTACG TCAGCCTCAG CAAGCACATC	960
AGCTTCTGAA TCTGCATCAA CCAGTGCGTC AGCCTCAGCA TCGACAAGCG CCTCAGCTTC	1020
AGCAAGTACC AGTGCGTCAG CCTCAGCAAG TACCAGTGCT TCAGCCTCAG CGTCGACAAG	1080
TGCGTCGGCC TCAACCAGTG CATCTGAATC GGCATCAACC AGTGCGTCAG CCTCAGCAAG	1140
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AACCAGTGCC TCTGAATCAG CATCAACAAG TGCTCGGCT TCAGCAAGCA CCAGTGCGTC	1560
GGCTTCAGCA AGTACTAGTG CATCGGCTTC AGCATCGACA AGTGCGTCTG AATCGGCATC	1620
AACGAGTGCT TCGGCTTCAG CATCAACGAG TGCGTCAGCC TCAGCAAGCA CATCAGCTTC	1680
TGAATCTGCA TCAACCAGTG CGTCCGCTTC AGCGTCAACC AGTGCGTCGG CTTAGCGTC	1740

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GACAAGTGCT TCGGCTTCAG CATCAACGAG TCGCTCGGCC TCAGCAAGCG CAAGTACCTC	1800
AGCGTCAGct TCCGCCTCAA CCAGTGCCTC GGCTTCAGCA AGCACAAGTG CGTCAGCCTC	1860
AGCAAGTATC TCAGCGTCTG AATCGGCATC AACGAGTGCG TCTGAGTCAG CATCAACGAG	1920
TACGTCAGCC TCAGCAAGCA CATCAGCTTC TGAATCTGCA TCAACCAGTG CGTCAGCCTC	1980
AGCATCGACA AGCGCCTCAG CTTTCAGCAAG TACCAGTGCT TCAGCCTCAG CGTCGACAAG	2040
TGCGTCGGCC TCAACCAGTG CATCTGAATC GGCATCAACC AGTGCGTCAG CCTCAGCAAG	2100
TACTAGTGCA TCAGCTTCAG CATCAACGAG TGCATCGGCT TCAGCATCAA CCAGTGCCTC	2160
GGCTTCAGCG TCAACCAGTG CGTCAGCTTC AGCAAGTACC AGTGCTTCAG TCTCAGCATC	2220
AACAAGTGCT TCAGCCTCAG CATCGACAAG TGCCTCGGCT TCAGCAAGCA CATCAGCATC	2280
TGAATCAGCG TCAACCAGTG CTTTCGGCTTC AGCAAGTACC AGTGCTTCAG CTTTCAGCATC	2340
AACCAGCGCC TCGGCCTCAG CAAGCACCTC AGCTTCTGAA TCGGCCTCAA CCAGCGCCTC	2400
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AACGAGTGCT TCGGCTTCAG CAAGCACAAG CGCCTCGGGT TCAGCATCAA CGAGTACGTC	2520
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TGCCTCGGCT TCAGCAAGCA CATCAGCATC TGAATCAGCG TCGACAAGCG CCTCAGCTTC	3000
AGCAAGTACC AGTGCGTCAG CCTCAGCGTC GACAAGTGCG TCAGCCTCAG CAAGTACTAG	3060
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TGCGTCGGCT TCAGCAAGTA CTAGCGCCTC AGCCTCAGCC TCAACCAGTG CGTCAGCCTC	3240
AGCAAGTATC TCAGCGTCTG AATCGGCATC AACGAGTGCG TCCGCTTCAG CAAGTACTAG	3300
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TGCATCGGCT TCAGCATCAA CGAGTGCCTC CGCTTCAGCA AGTACTAGCG CCTCAGCCTC	3480
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TGCGTCAGCC TCAGCAAGCA CATCAGCTTC TGAATCTGCA TCAACCAGTG CGTCAGCCTC	3600
AGCATCGACA AGCGCCTCAG CTTCAGCAAG TACCAGTGCG TCAGCCTCAG CGTCGACAAG	3660
TGCGTCGGCT TCAGCAAGTA CCAGTGCGTC AGCCTCAGCA AGTACCAGTG CGTCAGCCTC	3720
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AGCCTCAGCA AGTACTAGTG CATCAGCTTC AGCATCAACG AGTGCAATCGG CTTCAGCATC	3840
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GGCTTCAGCA AGTACTAGCG CCTCAGCCTC AGCGTCAACA AGTGCTTCAG CTTCCGCGTC	3960
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GGCTTCAGCA TCAACGAGTG CATCAGTCTC AGCAAGCACC AGTGCGTCGG CCTCAGCAAG	4080
CACCAGCGCG TCTGAATCCG CATCAACCAG TGCGTCAGCT TCAGCAAGTA CCTCAGCATC	4140
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TATCTCAGCG TCTGAATCGG CATCAACGAG TGCGTCCGCT TCAGCAAGTA CTAGCGCCTC	4260
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AGCATCAACG AGTGCGTCAG CCTCAGCAAG TACTAGTGCA TCAGCATCAG CATCAACCAG	5280

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GCAGGTTTGT GGATTGTTTT ATCCTTGTTA CTAAGGAAAA TTGCGAAAAA AAGTTAAGAA	32280
AAGGAGCCAG AATGGCGATT GAAAATTATA TACCAGATTT TGCTGTGGAA GCAGTCTATG	32340
ATCTGACAGT CCCAAGCCTG CAGGCGCAGG GAATAAAGGC TGTTTTGGTC GATTTGGATA	32400
ATACCCTCAT TGCTTGGAAC AACCTTGATG GAACGCCAGA GATGAAGCAA TGGCTACATG	32460
ACCTTCGGGA CGCGGGTATT GGCATTATCG TAGTGTCAAA TAACACCAAA AAACGCGTTC	32520
AACGAGCAGT TGAGAAATTT GGGATTGATT ACGTTTACTG GGCCTTGAAG CCCTTCACAT	32580
TTGGTATTGA CCGTGCTATG AAGGAATCC ACTATGACAA AAAGGAAGTG GTCATGGTTG	32640
GTGACCAACT CATGACAGAT ATACGAGCAG CCCACCGTGC AGGGATTTCG TCAATTTTAG	32700
TCAAACCCTT GGTCCAACAT GACTCAATCA AAACGCAGAT TAACCGAACT CGTGAGCGTC	32760
GTGTTATG	32768

(2) INFORMATION FOR SEQ ID NO: 72:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 14872 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 72:

CCAGTCACAA AGAAATTGAG CGCGTTCAGc TGAGGATGCA CTATGATGCA AGCTACATTT	60
CATTTGATGG GATATTAAGA AAGGAGATTT TCATGACACT TTTAGATGTA AAACACGTTC	120
AAAAAATTTA TAAACACGT TTTCAGGGCA ACCAAGTAGA AGCCCTCAAG GATATTCACT	180
TTACCGTAGA AAAGGGTGAC TACGTTGCCA TCATGGGTGA GTCTGGTCTT GGTAAATCAA	240
CTCTTCTCAA TATTCTAGCT ATGTTGGATA AACCAAGTCG TGGTCAGGTT TACTTGAATG	300
GAAC TGACAC CGCAACTATT AAAAATTCAC AGGCTTCTAG TTCCGGCGT GAAAAGCTAG	360
GATTTGTCTT CCAAGACTTT AACTTGCTAG ATACTCTGTC TGTTAAGGAC AATATCTTGC	420

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TTCCGCTTGT CTTGTCAAGA AGACCTATAA CGGAGATGAT GAAGAAATTG GTGGTGACAG	480
CTGAGAATCT GGGTATTAAC CAATTGCAAG AGAAGTACCC TTACGAGATT TCTGGTGGTC	540
AGAAACAGCG TGTAGCAGTA GCCCGCGCCA TCATCACAGA ACCTGAAATT CTCCTTGCGG	600
ACGAGCCAAC AGGAGCCCTT GATTCCAAGT CATCTGCAGC CTTACTTGAT GTCTTTAATG	660
AAATCAATGA GCGTGGGCAA ACCATCCTCA TGGTAACCCA CTCAACAGCA GCTGCTAGCA	720
GGGCCAAGCG TGTTCCTCTT ATCAAAGACG GCATTCTTTA CAACCAAATC TACCGTGGAG	780
AGAAGACAGA GCGTCAGATG TTCCAAGAAA TCTCTGATAC CTTGACTGTC ATGGCAAGCG	840
AGGTGAATTA GTATGTTTCG ATTAACCAAT AAGTTAGCGG TATCGAACTT GATTAAAAAC	900
CGCAAACCTCT ACTATCCCTT TGCCTGGCT GTTCTCTTGG CAGTCACCAT CACCTATCTC	960
TTTTACTCCC TAACCTTCAA TCCAAAGATT GCGGAAATCC GTGGAGGAAC CACCATTCAA	1020
GCAACACTTG GATTTGGTAT GTTGTGCGTT ACCCTTGGCT CAcCATTATC GTCCTCTATG	1080
CCAATAGTTT TGTATGAAA AACCGTTCCA AGGAACTGGG TATATATGGC ATGTTAGGCT	1140
TGGAGAAGCG CCATCTAATC AGTATGACCT TTAAGGAGTT AGTGGTATTT GGGATTCTAA	1200
CTGTTGGAGC GGGTATCGGT ATTGGAGCCT TGTTTGACAA GTTAATTTTC GCTTTCCTGC	1260
TCAAATAAT GAAACTGAAG GTTGAGCTGG TTGCTACCTT CCAAATGAAT GTTGTCATG	1320
CAGTACTTGT TGTCTTTGGA TTGATTTTCC TAGGCCTCAT GTTCCTGAAT GCTCTTCGAA	1380
TCGCCCCTAT GAATGCCCTC CAGCTCTCGC GTGAGAAAGC AAGCGGAGAG AAAAGAGGTC	1440
GCTTCCTACC TCTCCAAACG ATTCTTGGTT CCATAAGTTT AGGGATTGGC TATTATCTTG	1500
CCCTTACGGT AACCGATCCT CTTACAGCCC TAACAACCTT CTTCTAGCT GTTTTGCTGG	1560
TTATCTTTGG TACTTATCTA TTGTTTAATG CAGGGATTAC AGTCTTCCTA CAAATCTTAA	1620
AGAAAAACAA GAAATACTAT TACCAACCTA ATAACCTCAT ATCTGTTTCC AACTTGATTT	1680
TCCGTATGAA GAAAAATGCG GTTGGACTAG CAACCATCGC TATTTTGTCA ACAATGGTTT	1740
TGGTAACCAT GTCAGCAGCG ACAAGCATTT TCAATTCCGC AGAAAGCTTT AAAAAAGTTC	1800
TAAATCCTCA TGATTTTGGG GTTTCAGGGC AAAATGTTGA AAAAGAAGAT TTGGACAAAC	1860
TCTTGAGCCA GTTTGCAAGT GACAAAGGTT ATAGTGTCAA AGAGAAAGAA GTACTTCGTT	1920
ACAGTAACCTT TGGTATTGCA AATCAAGAAG GAACCAAGTT AACTATTTTT GAAAAAGGAC	1980
AAAACCGTGT CCAACCCACA ACAGTTTTC A TGGTATTGTA CCAAAAAGAT TATGAAAATA	2040
TGACTGGTCA AAAACTGTCT CTATCAGGAA ATGAGGTCGG TCTCTTTGCC AAAAATGACG	2100
GACTGAAAGG ACAGAAAGCT CTAACCTTAA ATGATCATCA ATTTTCTGTC AAAGAAGAAT	2160
TTAATAAAGA TTTCATTGTG AACCATGTTC CAAATAAGTT TAATATCTTG ACTACTGATT	2220

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ACAATTACCT TGTTGTTCCCT GATTTACAAG CCTTTTGGGA TCAATTCCCA GATTCGGCTA	2280
TCTATAATCA GTTTTACGGT GGTATGAATG TAAATGTCAG TGAAGAAGAA CAACTCAAGG	2340
TCGCTGAGGA GTATGAAAAC TACCTCAATC AATTTAATGC TCAATTAGAC ACAGAAGGTA	2400
GCTATGTTTA TGGTAGCAAT CTAGCAGATG CTAGTTCTCA GATGAGTGCC CTCTTTGGTG	2460
GTGTCTTCTT TATCGGTATT TTCCTATCCA TTATCTTTAT GGTCGGAAC GTTCTGGTCA	2520
TCTACTACAA ACAAAATTTCT GAAGGCTACG AAGACCGTGA ACGCTTTATT ATCTTGACAGA	2580
AAGTCGGTTT GGACCAAAAG CAAATCAAGC AAACCATCAA CAAACAGGTT TTAAGTGT	2640
TCTTCCTTCC TTTGCTCTTT GCCTTCATAC ATCTCGCCTT TGCCTACCAT ATGCTTAGCC	2700
TGATTTTAAA AGTGATTGGT GTAGTGGATA CGACTATGAT GTTGATTGTG ACCTTGCTA	2760
TCTGCGCTAT CTTCTCATC GCCTATGTGC TGATTTTCAT GATTACTTCA AGAAGTATC	2820
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CAAGGTCCG AATCATAGCT GTTTTGGTTG GGGCTTTTCC AAGCTAGCA CTTGTGTAAC	3000
CAGTGAGAAG AAGGGCCACA CCGACAATAA GGACGGTAGC AGGGATGCGG TAATCACTTG	3060
GAAAAATGGT CACTGACAGC ATTGGAGGCA AACTTCTAAG GAAAAAGGCA ACGAAGCTAG	3120
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CGGATACATA TTCTCCACCA GCCATTGAAA AGGCACCAGC TAAGATAGCC GTAAAACCTG	3420
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CAAAATTTGA ATCAATTTG TGATTTGTTT CTGACGCTAA ATTTCAAGTT CAAGTTAGCC	3600
ATCAAGAAGT CTTCTCTGGG TGAATGCTAG TCCAAGCATT TTTTAGGATA GTTGTTAATC	3660
CACTTTTCGA TGAATGCGAC TTCTTTGGGA GTCATTTTCT TGGTTCCCTT AGGTAACCAT	3720
CTACGAATGA GCCTGTTGTG ATTCTCATTA GTTCCCCTTT CCAAGAGGC ATAGGGATGT	3780
GCATAATAAA TGTGCTCCTC AGAAAATACA TTAGACAAGC GATTGAATTC CGTTCCATTA	3840
TCTGCCGTGA TGGAAAGAAT CTTGTGTTGT TTTAAGATGA GTTTTAGAGC CTGATTGACC	3900
ACATCAGCAC TTTTATTTGG AATCAATCGG ATGATCTGAT GTCTACTTTT TCGATCCGTC	3960

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AAGACAAGCA AGCAGTAGTT TTTCGCTCTC GTAAGTAGAA CTGTATCAAT CTCATAATGC	4020
CCATTCTCCA AGCGAAAATT GATAGCTTCA AGCCGCTGTT CGATGGATTG ACCAGCAGGT	4080
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TGTTTGCTTA ACCCCAATTT TCCATGATGA ATCCAATAGT AAATGGTTGA AATCCCACG	4200
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TCATAAGACT GTTGAGCATA GTCGGCAGAA TAAACCTCTT TGAAGCGCCC TTTTCCAAGA	4380
CATTGTCCGA CTGTCCCACG CTTGATTTCA GTGTGGATAG TTTGAGGAAC TTTTCCAAGC	4440
AGAGAGGCAA TTTCTCTATT TGATTTCCCT TCTTTTTTCC ATCTTTTCGAT TAAGCGACGG	4500
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GGTCACAAGC GTGGACGGG AAATCCAGAA CTTGTGGAAC TCTTAGGAGA AAAATGTGTA	5400
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GGTGGAACAA CTTTCATCGGT GCAGACTATG ATTCTGGCAA CCTGCAAGGC AGGAGATAAG	5580
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GGAGAATTTG TTATGTGTTA CCCTCCAGGT ATTCCTATCT TGGCTCCTGG TGAACGCATT	6600
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GCAGGAAGTT CAGTAGATTA AAGGCATAAT GTCCGGTATT TTCAAGAGCG ATGAGACAGT	7260
CTTGGTTGAG CTGTCGAAGA GACAGATCTA AGAGTTCAAA ACCAGCTTTA TTATTTGAAA	7320
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TCTACTGGGT TATCCACGAA CTTTTTGCCT TGTACCTTA GACGAGATAA AACGTCTATG	7500

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TCAAGCGATT GGAGGAAATG AACTAATCCA CAGTGGCTTA TTCCAAGTAT ACCACTTGGG	7620
CTTTGGCAGT AGCTAACTGC GCTAAATATA ATATAAGGAG AAATAGATGG ATTTATGGTT	7680
TTCTGAAGTT CATACTCCAG ATGTCAAATT GTCTCTGAGA ACAGCCAAGC AACTTTACGC	7740
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GGAACCGGAT GAGATGTTGG TCGAGGTCTG TCGTGAGTAT TTCCCAGACT TTGCTGCAGG	8040
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CGAAGATGAT TACGATATTA TCATCAACGA TCGCACAGAT CCATTTGGCC ATACGGAAGG	8160
ACTCTTTACC AAGGAATTCT ACGGCAATAG TTATCGAGCT CTGAAGGAAG ACGGCATCAT	8220
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CCGCAAGGTC AATCAAGCCT TTCCAATCAG TCGGGTTTAT CAGGCCATA TTCCAAC TAG	8340
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CGTGGGAGCC TTTATGTTGC CCAAGTATGT TGAGGACATT TTAGAAGAAG AGGAAGGAAA	8520
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GTTGGACAAA AAGATATGTA TCTCCTTCAC CATGAAGAAA TCGAATCATT GGCCAAGAAC	9300

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ATGAAATGTC TTGAAAATGT TGGACTCCTT CGTACGGATA CCATTAACTT TAACGGCCAA	9420
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CGTACAGTCG GAAAAACCAA TATTGGATGT ATCTTTACAG GTGTCAAAGA CGGTGTCAA	9540
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TCTTGCCCGA	GTTGTTTGAA	CATCCCTATT	TCTGTCAGGA	ACGTCAGTAT	GACTIONTACC	12180
AGTATGCCCC	ATCTGTAGCG	GAAAATACTG	CCATTTCAGCA	TTTTAAGGTG	ATTGCTAAGG	12240
AACTACAAGT	TGTTTTACCA	ATCAGTTTCT	ATGAAAAAGA	TGGTAATGTC	TTGTATAACT	12300
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CAGATGACCA	TTATTATCAA	GAAAAATTCT	ATTTACAGCC	TGGTAACACT	GGTTTCAAGG	12420
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TGACGGATGA	AACAGGAGCT	ATTCTAGAAC	GAGCTGAAAG	ACAAGAAGAA	GCTGTTCTGT	12780
TAGCTACTTA	TGACCTAGAC	AAGGGAGCAA	GTGAACGCCT	AAACTGGGGC	TTGTTTCGAG	12840

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TTTTATGATT CGCTATCTT GTCTATTGAT TAGTCCGTAT TTTAAATAT TAGCAAAAAA	13020
GCAAATAGCA GTAACCTCTG TCTATTGCT TTTCTTTTT ATAGAATATA TTTCTCAATA	13080
GCACGCGCAA CGCCGTCTT TTCGTTGCTT GAGGTAACGG CATCCGCAAG AGATTGATA	13140
TAATCGCTGG CATTTCCCAT TGCAATCCCA AGCCCTGCAA ACTGGAGCAT TTCGATATCG	13200
TTATTAGCAT CGCCCATGGC CATAATCTCT GAGGAATCAA TCTTCAAAAT CTCAGCTAGT	13260
CGTGAAAGAG CAGTAGCCTT TGTCGTTCCA AGCGGCATTG CTTCATAAAT GACAGGCTGC	13320
GAACGAACTC CACTGAATCG TTGGCAAAGC TCTTCAGCAA AACGCTGCTC AAAATCGTCT	13380
GTTTGTCTT TTGTTCTTAA ACACATACCT TGGAACATCC GGAACCTTCC ACTAGTCGCT	13440
TCTTCAAGAG AAATTTCACT CAGGTCTGAA AATACTAGTT TAGCATCATT TTCAATAACT	13500
TGATTGGGCT TGTCACCGAG AACAAAATAA TGTGACTCGT CAAAAGTGT CAACTGAACA	13560
TCACTCTTTT CAGCAAGGTC ATAGAGGTAT TCGATGTCAG CTGGACTCAG TTCTTTCCAG	13620
TCAACTAGAC TCCAATCACT GGTCTGGTGA GTTGAACAAC CGTTGTTAAC AATAATATAT	13680
TCGTTCTGGA GGTCAAGCTC CAGTTTTTTG TAGTAGGGGA GGACACCGAA AAGGGGGCGA	13740
CCCGTACAGA GAACCACTT GACACCTTTT TCAATGGCTT TGTGAATAGC AGTAATGTGT	13800
GCTTGTGGGA TTTCCTTGGC TTCATTGAGG AGGGTGCCGT CCATATCCAA GGCTAGTAGT	13860
TTAATCATAG GTCTTCTCTT TTATCTTTCG TATTATTATA GCATATTTTG GAGAAGAAAT	13920
TGATAGAAAG CTTGAGACTA ATTGATTTTA TAGTTTAAGA TGTTTTGATG ACAATTCATG	13980
ATTTGAAGAG GATATTTTCG AAAGATATGC TATACTATGT TTGTCAATGT TGCAACTAGA	14040
CAAAATAAAA AACCAACTTA ATATAATAGT TTTTTGTAA GTAGGTATGA GTAGCAGATT	14100
ACTCAACTAA TCTGAAGAAT AATGGAGGAA ATATATCATG ATTTTAATGA CAAAAATAT	14160
AAATCTAACA AATGAAGAAT TAGAGCTGAT ACAAGGTGGA GCAGATCCAT ATGGTAAAAA	14220
TCCTAATGGT AGGTACGATT GGGAAATAGA ACCAGTATTA ACTCTGCTGG TTCATGGATT	14280
TTGTCCGAGA GGCACCTATG ATTCAGGATA TATTGGAGGA GGTAAATCATC TTGCAAAGG	14340
AAGTGCTGCG AGATTTTAAG TAAAATTTAT TAGGAATATG AAGAAACAAG GGGAGAAAAC	14400
AGAGGATTTA ATATGAAAAA ACGAGCTATT CAAATTTTAC TAGCATTGTC CTTAATTTTT	14460
TACAAATCAA CTTGGTTTTG GAGGCTTTTC AATTATCTCG CAAAGCCCTA TCTACCAGCA	14520
AGTCGTGAAT TTTTCAGAT TCTGCTTTTG ATGGAGAGCG GAGTCTTTT CTTAGCGGTC	14580

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ATCTATCTAC TGGTTTTTGC AGGAAAGAAA ATTTTTCATT TCAAGTGGCA GCTGAGGTAC	14640
TTCATCTACC TTTTACTGGG CTACATCATT TCATATATGT CTGACTTCCT CTTTTCGTAT	14700
TTTATATCCC TGTCTTCAAA TCAGATTTCT TTGAATGAAA CGGTAGAAAT GATGGGGAGA	14760
CAGGAGTTCC CTTATGTCTT GCTCATCGTT TGCTTCATCG CCCCTATTGC TGAGGAATTG	14820
ATTTATCGAG GtGTGCTTAT GACAACCTGT TGCAAAACT CACCTTGGTA CG	14872

(2) INFORMATION FOR SEQ ID NO: 73:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 10223 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 73:

CGTGCTATCG GTCTCAAAAC CAATCTGGTC GCTATGGTCA AATCCAGTTG GAAAAATCCAT	60
TCTTCTTGGA GCCATCTGCT GGATTGCCAT CATCCTCACC ACTCTTGGTA TGCAGACCCT	120
TATCGGCATT TTCTAATACT CTTGAAAAAT CTCTTCAAAAC CACGTCAACG TCGCCTTGCC	180
GTAGGTATAT GTTACTGACT TCGTCAGTTC TATCTGCAAC CTCAAAACGG TGTTTGAGCT	240
GACTTCGTCA GTTCTATCTG CAACCTCAAA ACGGTGTTTT GAGCTGACTT CGTCAGTCGT	300
ATCTACAACC TCAAAACAGT GTTTTGAGCT GACTTCGTCA GTTCTATCTG CAACCTCAAA	360
ACAGTGTGTT GAGCAGCCCG TGGCTAGTTT CTAGTTTGC TCTTTGATTT TCATTGAGTA	420
TAACACAAAA GGTAGCCCAT CAGCTACCTT TTTCTTATGC TTCCTCAATC AAGCGAGTAT	480
GTTCTCTCTT GATACAGCGA TTCATCACGA TATCATCACA TCCACCATCA CGCAAAATCT	540
CTTTCGCTTC TAAACTTTCA AGTCCTAGCT GTGCCCCAAA AATCTTGGCA TCAGCTTTGA	600
GAAAATCACG CGCCACATCG GGCAGAAATT CACTGCGACG ATAAACATTG ACAATATCTA	660
CAGGAAAAGG AATTTCAGCG AGGCTAGCAT AAGCCTTTTC ACCCAAGATT TCGCCACCTG	720
CCGCCTTGGG ATTGACTGGG ATGATTTTAT AGCCCCGAGC CTGCATTTCC TTTGTTACTC	780
GATTGCTGGT TGTTTCTTCA CGGTCAGACA AACCACCCAC AGCAAGGGTT TTAATCGTTG	840
CGAGATACTG ACGAATCACG CCATCACTTG GATTGATAAA TTCTTGACTC ATAGAAATCC	900
TCCTTTTTC TCAGTATAGC ACATTTTGAA AAGGTTTGCA GAATTATACT ACAAAAAAGG	960
AGGACTAGCC CCCTTTTAT TTAGCCTCGT ACCAGGTTGC CCCTTCATTC TCATCTGCGA	1020
TAAGAGGAAC ACTGAGTTGA ATGGCTTCTT CCATGGTTTG TTTCACCAAT TTTTTCATCT	1080
CTACCAATTC AGATTTAGGC ACTTCAAGGA CGATTTCATC GTGCACTTGT AACAGCATCT	1140

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TAGTCTGATA ACCACCTGCA ACCAAGGCTT TATCCAGCTG AATCATGGCA ATCTTGAGAA	1200
TATCTGCTGC CGAACCCTGG ATAGGTGAGT TGATAGCAGT TCGCTCCGCA AAACCACGAA	1260
TATTGAAGTT GCGCGAATTG ATATCTGGCA ACTCACGGCG ACGCTTAAAG AGGGTCTCTA	1320
CATAGCCCTT ATCACGCGCC TCCCGCACCA CTTTCATCCAT GTAGTTTTTA ATACCTGGAA	1380
AACGTTCAAA GTAGGTATCA ATGTAGGCTT TGGCTTCCTT ACGACTAATT CCCAAATTAT	1440
TAGACAAGCC AAAGTCTGAA ATCCCATAAA CCACTCCAAA GTTAACTGCC TTGGCATTGC	1500
GACGGTCGTT TGCAGTCACA TCATCAGGAC GCTCAATGCC AAAGACCCGC ATGGCTGTCTG	1560
AAGTATGGAT ATCTGCCCCC TCTTGGAAGG CCTTAATCAA GTGCTCATCC TTAGAAATAT	1620
GCGCCAAAAC GCGCAATTCA ATCTGTGAAT AGTCAGAGCT GAGTAGCACA CTATCCTCCC	1680
ACTCTGGCAC AAAAGCCTTC CGAATCAAGC GCCCTGTTC CAATCGGGCA GGAATATTTT	1740
GCAAGTTTGG ATCCCACTA GACAAACGCC CGGTCTGGGT CAAATCCTGC ACATAGCGAG	1800
TATGAATCTT TCCATCAGCC AAAATCCAGT CCTGCAAGCC AATTACATAA GTAGATTGAA	1860
TCTTAGCAAT TTGACGGTAA TCCAGGATTT TCTTAACAAT CGGAGCAATA GGAGCGAGAC	1920
GCTCTAAAAC ATCCACTGCT GTCGAATAAC CTGTCTTGGT TTTCTTAGTG TATTCTAGAG	1980
GAAGTCCCAA TTTCTCAAAG AGAAGCACGC CCAACTGCTT AGGCGAGTTG ACATTAAACT	2040
CCTCACCAGC CAGCTCGTAA ATCTCTTGAG TCAGTTTTTC AATGACAAGC TCATTTTCAG	2100
CCTGCATCTC AAGCAAGGTC TCTTTCTTGA CCATAATCCC AGCAATTTCC ATCTTGGCAA	2160
GGACAAAAGC CAGAGGTTGC TCCATATCAT AAAGAAGCTC TAATTGCCCA TTTTCGCTGA	2220
GTTTTTCAAG TAAATAGGC TCTGTTTCTA CCAAAACAGC AAGTTTACAA GCTAAGTGTT	2280
CCAAGAATTT CTCACGTTCA GGAATGGCCT TTTTAACACC CTTACCGTAG AAAGTTTCAT	2340
CATCAACCAA GTAAGTCTGA CCATAAAGAC TAGCGATGGT CGCAATTTCA TTGTCCTCCA	2400
CAGTCGAAAG GAGGTATTTA GCCAAACGGA TGTCAAAAGC AGGCGCCTGC AAATCCACAC	2460
CAAAACGTTG CAAAAGAACT TTAACCTTCT TAAAGTCATA AACTCTCAGA GATGTTTTTT	2520
CTAAGAAATC CTTGAAAATC GGGTCTTGCA ACAGCTCAAG CTTGTCTGTG GCATAGAGCT	2580
TATCCCCACA AGACCAGACA AATCCAACCA AATTATCCGT ATGGTAATTC TCACCAAAAA	2640
GCTCAAAGTG GAAGATAGAC TCTTCACTCA GCATATCTTG ACTGATTTGG TCAACAATAG	2700
TAAAATCCAA ACTCTCAGAC ACATCAGCTG ACGACACATT TAAAGCCTGC TTTAGCTGTT	2760
TGAAGCCCAT CTCATCGTAG AATTTCCCAA GATTTTCAAC ATCTGGACCA CTATAGACCA	2820
AGTCCTCTAA ACCAATCGCA ATCGGTGCCT TGGTATCAAT GGTCTGCTAGT GTTTTAGACA	2880

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AAAAGGCCTG TTCCTTGTCA TTGATGAGAT TTTCTTCAT CTTAGAAGTC TTCATTCCAT	2940
CAATATTTTC ATAAATCCCC TCAAGCGAAC CATGCTCCAG CAAGAGCTTA ATACCCGTCT	3000
TTTCACCGAC TTTGGTCACC CCAGGGATAT TATCCGACTT ATCACCCTATG AGCGCCTTGA	3060
GATCGATAAA CTGAGCTGGT GTGAGGCCCA TTTCTTCCAT GAGGTAATCT GGCGTAAAGG	3120
CCTCAAACCT AGCCACACCT TTCTTGGAAT TTTCAACCAC CGTATGCTCA TCCGTCAGCT	3180
GAATCAAATC CTTGTCCCCA CTGACAATAG TAATATCAAA ACCATCCTGC TCTGCTAGCT	3240
TATCCAGCGT CCCAATGATG TCATCCGCCT CATACTGAGC CAGATCATAG TGACGAATCC	3300
CCATATGATC CAGCAACTCA CGAATGAAAG GAAATTGCTC ACGAAACTCA TCAGGAGTCT	3360
TGGCCCCGACC ACCCTTATAG TCCGCATACA TCTCTGTCCG GAAGGTCGTC TTTCCCGCAT	3420
CAAAAGCCAC CAAAATATGA CTCGGCTCAA CCCGCTCAA TAAATGACTC AACATCAACT	3480
GAAAACCATA AATCGCATTG GTATGCAAAC CAGCCACATT CTTAAAACGG TCCAACCTGCT	3540
GATACAGCGC AAAAAACGCC CGAAAAGCTA CAGAAGACCC ATCAATCAAT AATAATTTT	3600
TCTTATCCAT ACACCCATTA TAAAGGAAAG AATCAAAAAA TACCATTGGG AAGAGCTAGA	3660
GCAAGTATTT TTCAAACCTT TTCCGAATAA ATAGATAGAG CCAGAGAATT TAGTAAACCT	3720
AGATTTAAAA ATGTGCTATA ATATAGTATA TTGAATCTAT AATAGTACAC CTTGACTGCT	3780
AAAATATTTT TATAAATTAA TTTGACTTTC CTGATAGAGT TATTACATC TTATTTCAAC	3840
TCATATAGA AGGAGGAATA GGAGGATTCT CAGACATCCG GGCATCAGCC CAACTAATGA	3900
TTTGATTGCT AAGAAAATAT TCAGCAATCC AGAAATCACT TGTCAATTTA TTCGCGATAT	3960
GCTGGACTTG CCAGCAAAAA ATGTGACCAT TTTGGAGGGA AGCGATATTC ACGTATTACT	4020
CTCCATGCCT TACTCGGTGC AGGATTTTTA TACCAGTATA GACGTCTTGG CGGAGTTGGA	4080
TAACGGTACT CAAGTAATTA TTGAGATTCA AGTCCATCAT CAGAATTTTT TCATCAATCA	4140
CTTGTTGGCT TACCTGTGCA GTCAGGTAA TCAAAATCTT GAAAAAATTC GTCAGCGAGA	4200
AGGTGATACT CACTAGAGCT ACAAACACAT CGCTCCTGTT TACGCCATTG CTATCGTGGA	4260
TAGTAATTAT TTCTCAGATG ACCTGGCTTT TCATAGCTTT AGTATGCGCG AAGACACAAC	4320
AGGTGAGGTA TTGGCGATTA CCAACAATGG ACAGGAAAAC CATCTGGTTA AGATGGCATT	4380
CTTGGAATTA AAAAATACAG AGAAACCAGC AAAGACAAGG TTCGCAAGCC ATGTTGGAG	4440
TTTTTCGGCA ACAAGCCCTT TACCCAGCAA CCGCAACGAG CCATTACCCA AGCAAATCAA	4500
CTGCTGGACT ACAAGAGCTG GTCGAGGAG GACAGGAAAA TGTTTAGTCA ACTACATATG	4560
CGAGAAGAAC AAGTCTTGTT AGCACAGGAC TATGCCTTGG AACTGCTAG GGCTGAAGGC	4620
CTTGAACAAG GACTAGAGCG TGGGAAAGTT GAAGGAAGGG CAGAAAGGAA ACTTTTGGCC	4680

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TTCCTAGACA TAGTACGCCA AGGTCTTCTG ACTTCTGAGG TTGCCAGCCA GCAATTAGGT	4740
ATGTCAGTAT CTGAATTTGA GGCACGTGTG TAAAATGGCT CCATAATATC CATAGTGGGT	4800
AAATCCCCTA TGGATATTAT GGAGCCTATT TTGTGTAGAA AAAAAGTCCC ATATGACCTA	4860
TAATGAAAAG CGACAAAACA ACTCATTAGA AAGAATCATA TGGAAACAATT ACATTTTATC	4920
ACAAAATTAC TAGACATTAA AGACCCTAAT GTCCAGATT TAAACATCAT CAATAAGGAT	4980
ACACACAAGG AAATCATCGC CAAACTGGAC TACGACGCCC CATCTTGCCC TGAGTGCGGA	5040
AACCAATTGA AGAAATATGA CTTTCAAAAA CCTTCTAAAA TTCCTTATCT TGAAACGACT	5100
GGTATGCCTA CAAGAATTCT CTTAGAAAAG CGTCGATTCA AGTGCTATCA CTGTTCAAAA	5160
ATGATGGTCG CTGAACTTTC TGATGACGTA CAGTCATATT TCTTCTCTTT TTATTATATC	5220
ACAGTTTAA ATCTAGCTTT ACTAGATTCA CCGCTACTAT CTATTTATTC GGAAAAAAGA	5280
CGAAAAAAC TGAGAATCAT CTCAGGCTTG GTCATTAAAT TTTTTTCTCA ATATCGAAAA	5340
GTGGAGAAAG TGGTCGTTTT TCATGAATAC GTACGATAGC ATCCCCTAGG AGATGAGCGA	5400
TTGAAATCTG CTCAATCTTA TCAATCAAAC GCTCTTCTGG CAGATAGATG GTATCCAAAA	5460
CAACCAATTT CTTAATAGCT GATTTTGGGA TATTGTCCGT AGCAGGACCA GAAAGAAGT	5520
GGTGCGTACA GCTTGACATG ACTTCAACAG CACCAGCTTC CGCAAGAGCA TCTGCCGCAT	5580
GACAAATCGT TCCAGCGGTA TCAATCATAT CATCAATCAA GATACAAGTC TTGCCTTCAA	5640
CCTTACCGAT GATATTCATA ACTTCACTAG TATTCATCTT ATCAACGCTA CGACGTTTAT	5700
CAATAATAGC GATAGATGTT TTCAAAAAAT CTGCCAACTT ACGAGCACGA GTCACCCCTC	5760
CATGGTCCGG GCTGACAACC ACATAGTCAG AACCAACCAT ACCACGACGC TCAAAATAAT	5820
CTGCAATCAG AGGAGCACCC ATCAAATGAT CCACAGGAAT ATCAAAGAAT CCTTGAATTT	5880
GCGCAGCATG CAAGTCGATG GTCAATAAAC GATCCACTCC AGCTACTTCA AGCATATTTG	5940
CGACAAGTTT TGAAGTGATT GGCTCACGCG CTCTCGCCTT TCTATCCTGA CGTGACATACC	6000
CATAGTAAGG CATGACAACA TTGACAGATT CTGCACTCGC ACGCTTCAAA GCATCTACCA	6060
TAATCAAAAT TTCAAGCAGA TTGTCATTTA CAGGCGAACT AGTTGATTGT AAGATAAAGA	6120
CGTGTTTCCC ACGGATTGAT TCTTCAATGT TGACCTGAAT CTCTCCATCT GAAAATTGGC	6180
GAACACTTGA TTTCCCAAC TCTATCCCA TCTCCTGCGC CACACGTTCT GCCAATTCTT	6240
TATTAGAAGA AAGGGCAAAC AGCTTTAAAT CAGAAAAAGA CATGATTTCC TCCGGTATAT	6300
ATGTATAACT TGTGCTTTTC ACAAGATTTT CCATCTACCA TTGTAGCGCT TTTTGCACTA	6360
TTTTTCAATC AAAAATAAAA GAAGGGCACC ATATTTGTAC CCTTGCATCA TTCTTTTGAA	6420

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AAATATTCTA GGTCAATCAAC TCATTGTGTT TCTCAACAAA GCAATAAGCA TGATAAAAAC	6480
CATAGAGAGC AATAGCCGTA ACCACTGGAA TCGCTAAAGG CAACTCTGTT TCCAACTCCA	6540
CAAAAGGAGA GTTAAACAAG AAGTGAGTTC CCAAGGCTAA ACCTAGAAAA ATAAGGCCCT	6600
GTTTCTTGCC AACCTTCTGT CCTTTATAGG CTCTGTAAAG CAAGTAAACA CCTACTACAG	6660
CTAGACCTGA AAAAGTCCAG TGAGAGGCAA TTCCTGAGAT GATACGCTCT AAAATTTCGG	6720
AAATAGTAAA GTCAAAGCCC TCTGGCAAAT CCGTACGAAT ATAACCAATA TCCTTAATCA	6780
TTTGGAATCC CAAACCGGAA GCAATTCCAA GTAAAAACAA AGATTTTAAT TTTGCGACAG	6840
GAATCAAAGC CAAAACAAAA ACAAGTGACA ATAATTTCAA GGGTTCTTCT ACCAAAGGAG	6900
CCGCAATAGC ACTTTCAAAG GCATTTAAAA ATGGACTATC TGGGAAAAGA ACCCCCAGTA	6960
AATCATGGAT ATAAGTATTA GCAAACTAG ACAACCAGCC TGAAAGGAAC ATCCCTCCCA	7020
ATAAGACAG AATCAAAACC TTCTTTGGCA ATTCCCATT TTCCAATAC GGAAGAGAAA	7080
ATAAGAGCC GGAATCATGT AAAAGAGAGC TAGAAAGATA GAAACTCCCA TTAGTCCATA	7140
TTCCGCACCT GACCTCGAAC CGTCCGTATA GTAGATGGTT TCATACTGTA AACCAATACA	7200
TAGCAATAAA ATAAAAATAA ATAAAATATT GCTTTTCTTC ATACACTTTC TTTCTAAATG	7260
AAGTATTTAT AATTCTACGA CTGTCATACT TCCTGTATCA ACATTGTAAA TGGCACCAGA	7320
GATAATGACA TCGTCTGGTA TTAGGGGAGA CTCGATAAGC AGTTGCATAT CCTCGCGTAC	7380
ACTCTCTTCT ATATCTTGGA AGGGCAAGAA GTCCTGGTCT GACACATCGA CACCCAATTC	7440
TTCCTTCAA TACTCCTGAA AAGGTTCAAT TTCAAAGGTC TGAGCACCAC AGTCTGTATG	7500
ATGCAATACC ACAATTCTC TTGTCCCAT TTGTTGCTGG GAAATAACTA GAGAACGAAT	7560
CATATCCTCA GTCACGAC CACCTGCATT CCGCAAAATA TGAGCATCCC CAAGTGCCAA	7620
ACCTAGAGCT TGGCAACGT GCAAACGTGA GTCCATACAG GTCACAATGG CTACTCTGGT	7680
TTTAGGTTTA AGTGGCAGAT TTAAGTGGC ATGTAGGGCA ACATAAGCCT GATTGGCTTG	7740
CATAAACTGT TCAAAATACG ACACGATTCC CTCCTGAAA ATTTGATAGT CAAATATTTC	7800
TCCTATCTTA TCATTTTAA GAGAATTTGT CACGGATTAT GCAAAGACCT TTTCAAGAC	7860
TTCTGAATC GTTGTCACGC CAATGACCTG AATTCCTTA GGCAGAGTGA TTCCTGTCAA	7920
GGAATTCTTA GGTACATAAA TCTTAGTAAA GCCCAGTTTA GCAGCTTCGT TGATGCGTTG	7980
CTCAATACGA TTCACGCGCC GAATCTCTCC TGTCAAGCCC AGTTCTCCGA CAAAACATTC	8040
CTGAGGATTA GTTGGCTTGT CTTGTAGCT CGAAGCAATA GCAACTGCAA CAGCCAAGTC	8100
AATCGCAGGT TCATCCAATT TAACACCACC AGCAGATTTG AGATAGGCAT CCTGATTTTG	8160
CAAGAGAAGC CCTGCCCGTT TTTCCAAAAC AGCCATAATC AAGCTAGCAC GGTAAAAATC	8220

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AAGTCCTGTC GTAGTACGCT TGGCATTTC	AAACATGGTC GGTGTTACCA AAGCCTGAAC	8280
CTCCGCCAAA ATCGGACGCG TCCCTTCCAT	GGTTACAACG ATGGAGGAAC CAGTCGCCCC	8340
ATCCAAACGC TCTTCTAGGA AAACCTTGACT	CGGATTGAGT ACCTCAACCA AGCCGCCCCG	8400
CTGCATCTCA AAAATCCCAA TCTCATTAGT	GGAACCAAAA CGATTTTGA CCGCTCTCAA	8460
AATACGAAAG GTGTGGTGAC GCTCCCCTTC	AAAGTAAAGC ACCGTATCCA CCATATGCTC	8520
CAACATACGA GGCCAGCCA AGGTTCCTTC	TTTGGTCACA TGACCTACGA TAAAGATGGC	8580
AATGTTATTG GTCTTGGCCA ACTGCATGAG	TTTCAGCGGC ACTTCACGCA CCTGAGAAAC	8640
AGACCCCTGC ACCCTGAAA TCTCAGGAGA	CATGATGGTC TGGATGGAAT CAATAATGAG	8700
AAAGTCTGGC TGGATACGCT CCACTTCTGC	ACGAACACTC TGCATATTGG TCTCTGCATA	8760
GAGATAAAAC TCACTATCAA TATCACCTAA	GCGCTCTGCA CGTAGTTTAA TCTGCTGGGC	8820
AGACTCCTCC CCACTGACAT AGAGAACTGT	CCCCACTTGG GACAACTGGG TTGAGACTTG	8880
TAGGAGAAGA GTTGATTTC CAATCCCAGG	ATCCCCACCG ATAAGGACGA GACTTCCTGG	8940
TACCACTCCG CCTCCAAGCA CACGGTTGAA	TTCCCTCCATC TCCGTCTTGG TTCGATTGAC	9000
ATTGATGGAA GTCACCTCAG CTAGTTTCAT	GGGCTTGGTT TTCTCACCTG TCAAGGACAC	9060
ACGCGCATTC TTAACCTCGG CAACCTCAAC	CTCTTCCACA AAAGAAGACC AAGACCCACA	9120
GTGGGGCAA CGTCCCAGAT ATTTAGGGGA	ATTATACCCA CAATTTTGAC ATACAAATGT	9180
CGCTTTTTTC TTTGCGATGA CAAACCTCTT	TCTATATCTC TAACTCACAC TCAATCACTT	9240
GGCAAAATC AATCTTCTCA TTTGGCAGAA	ACTGGCGCAT GAGCATTCGA TGAGCAACAA	9300
CTACCACAGT CTGATGTTCT CGATACTTAG	ACATACATTC TAGAAACCGA GACTTCATTT	9360
CCGTAGCTGT CTCATATTGA ATAGGACTAT	TAGGAAGCAA CTCCCCCTTG TTTTCTAAAA	9420
ACAGTCTTCT AGCTGTTTCA AAGTTTTCTA	TTCTGTGTTT ATAGACCTGC CATTCATGTA	9480
ATAAAGGCTC TACTCTTAAA GGAAGACCCG	TAGCACAGAC CACATACGAA GCCGTTTCTA	9540
AAGCTCTTGT GACTGCAGAA GATACGATTA	TTTCAGCTGA CGAGAGTAAA GGATTTTTC	9600
TCAATTTCTG GACTTGCTGC CGTCCCATCT	CAGACAAGGG TGCCAAATCT ATCCCAAATC	9660
CTATATAAGA ACGCTCCTCT AACTCACGGT	AATCTGGCTC CCCATGACGT ACAAAGATAA	9720
TCTTCATTCT AGTGCCCTGT CGATCCAAAT	CCACCAGTTC GAACGCCATC AGCTGCATCT	9780
CCATCTGCAA TTAAGAAAGT AGCAAAAACA	GCCTGGACAA TACGCTCCCC AACTTCAAGA	9840
ACAACCTCTT GGTCTGTGAT ATTCTTCATC	TGCGCAAAAA TATGCCCTTC ATTTCCAGGA	9900
TTTCATAAT AATCCCCATC AATGACTCCA	ACTGAGTTAA TTAAAACCAA GCCCTTCTTA	9960

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CGAGGATTTG AAGAACGATC ATAGAGGTAG AGAACCTCAG TCGGCTGCAT ATAAGCCTTA	10020
ACCCCTGTCG GAACCAAGAC AATCTCTCCT GGCGCAACAA CTGTACGCAC AGCAACCTTT	10080
AAGTCGTAAC CAGTCGCATG CGCTGTCTCA CGCTTGGGCA ATAAATTTTC ATCTGTAAAA	10140
CTCGAAACCA ATTCAAAACC ACGAATTTTC ATAATTTTCT CTTTCTATT ATCATTATT	10200
CTAGATTATT CTATACTTAT TTA	10223

(2) INFORMATION FOR SEQ ID NO: 74:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 16535 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 74:

TGGTTCTGTC CTTATCGGCG CCTTGTCTTG CTTGCCATGG CTACACCAAC TATCTCATCC	60
GACGAAAGTA CACCAACCAC TAACGAACCC AACAACAGAA ATACAACCAC CCTTGCCCAA	120
CCTCTTACTG ATACAGCAGC TGGCTCTGGT AAGAACGAAA GTGATATTTT TCCACCTGGA	180
AATGCAAACG CTTCCCTAGA GAAAAAGAAA GAAAAACCTG CTGCAAGCCC AGCCGATCCA	240
GCACCACAAA CTGGACAAGA TCGTTCAAGT GAGCCAACTA CTTCTACTAG TCCAGTAACA	300
ACTGAAACTA AGGCAGAAGA GCCCATCGAA GATAACTACT TCCGTATCCA TGTCAAAAAA	360
CTTCTGAAG AAAACAAGGA TGCTCAAGGA CTATGGACTT GGGACGATGT TGAAAAACCA	420
TCTGAAACT GGCCAAACGG AGCTTTGTCC TTCAAGGATG CCAAGAAAGA TGA CTACGGC	480
TATTACCTAG ATGTCAAAT AAAGGGAGAA CAAGCCAAGA AAATTAGCTT CCTCATCAAC	540
AATACAGCTG GAAAAATCT AACCGCGAT AAATCTGTAG AAAAAGTAGT TCCAAAAATG	600
AACGAAGCTT GGTTAGACCA AGATTACAAG GTTTTCTCTT ACGAGCCACA GCCTGCAGGA	660
ACTGTTTCGCG TCAACTACTA CCGCACAGAT GGCAACTATG ACAAGAAATC TCTCTGGTAC	720
TGGGGAGATG TGAAAAATCC AAGTAGCGCT CAATGGCCTG ACGGAACAGA CTTTACGGCT	780
ACAGGCAAAT ATGGCCGCTA TATCGACATT CCTCTTAATG AAGCCGCAAG AGAATTTGGA	840
TTTTTATTAC TAGATGAGAG CAAACAAGGA GACGACGTGA AAATCCGTAA AGAAAATTAT	900
AAGTTCACAG ATTTGAAAA TCATAGCCAA ATTTTCCTAA AAGACGATGA TGAATCGATT	960
TACACAAATC CATACTATGT CCATGATATC CGTATGACAG GAGCCCAACA CGTAGGCACT	1020
TCTAGCATTG AAAGTAGCTT TTCAACACTT GTCGGTGCTA AAAAAGAAGA TATCCTCAAA	1080
CACTCCAACA TCACTAATCA CCTAGGAAAC AAGGTAATA TTACCGATGT TGCAATCGAT	1140

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GAAGCTGGTA AGAAAGTGAC CTACAGCGGA GATTTCTCTG ACACAAAACA TCCTTATACT	1200
GTTAGCTACA ATTCCGACCA ATTCACTACC AAAACAAGCT GGCGCCTGAA AGATGAGACA	1260
TACAGCTATG ATGGCAAAC TGGAGCTGAC CTAAAAGAAG AAGGAAAACA AGTTGATTTG	1320
ACCCTTTGGT CACCAAGTGC TGATAAGGTT TCTGTTGTTG TCTACGACAA GAATGACCC	1380
GACAAAGTAG TTGGAACGTG CGTCTTGAA AAAGGGGAAA GAGGAACTTG GAAACAACT	1440
CTAGACAGCA CAAACAACT CGGAATCACA GATTTCACTG GCTACTATTA TCAATACCAA	1500
ATCGAGCGTC AAGGTAAAAC TGTCTTGCA CTCGATCCTT ACGCTAAATC TCTTGCTGCT	1560
TGGAATAGCG ACGATTCCAA GATTGACGAT GCCCATAAAG TGGCTAAAGC CGCCTTTGTA	1620
GATCCAGCTA AACTCGGACC TCAAGACTTG ACTTATGGTA AGATTACAA TTTCAAGACT	1680
CGTGAAGACG CCGTTATCTA CGAAGCTCAT GTGCGTGATT TCACTTCAGA TCCTGCCATT	1740
GCAAAAGACT TGACCAAACC ATTTGGGACT TTTGAAGCCT TCATTGAAAA ACTAGACTAT	1800
CTCAAAGACT TGGGTGTAAC CCATATCCAG CTCCTTCCAG TCTTGTCTTA CTACTTTGTC	1860
AATGAATTGA AAAACCATGA ACGCTTGCTT GACTACGCTT CAAGCAACAG CAACTACAAC	1920
TGGGGATATG ACCCTCAAAA CTACTTCTCC TTGACTGGTA TGTACTCAAG CGATCCTAAG	1980
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GCCGCTTCTA TCGAAGAAGC TTACAAGGCT GCACGCGCCC TCAATCCAAA CCTCATCATG	2340
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 AAAAAATTC TATCACCAGC ACCTACCAA TCGAGTAGGG GATAATCTCT AGCCCTCTC 15960
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 CAAGGTAATA ATCCAAACAC GAAACCAGTC CACGTTTTC CAGGACTGGT TTTGATATAG 16080
 CACGTTTAAG TACCGACTTC TGAGCTACTA ATTGATAATG GTCGCCCCAG CCAGATACCT 16140
 TATCTGCTAT CCATTTAGGA ACTCCTAACT TAAGCAATCC CCATAATCGT CTCGATTTCT 16200
 TCTTCCATTG CTTCCAGATA ATCACTCGTA GCGAGTACG CAAGCGCTCA TCTATGCTGG 16260
 CGACTATACT TTTCATATTT CCCAATGAGC AATAGTTTAT CCATCCTCGA ATAGACAAAT 16320
 TCAGTTGCTC AATACGTCTT GTTAGGTCTA TACTCCATTT CCTCTGTGTT AGTTTCTTCA 16380
 ATTTAACTT AAATCTCCGA AACTATCTT GATGTGGACG GCTTTTCCAA CCATCTGATA 16440
 ATTTCCAGAA CCCAAAACCT AGATATTTCA ACTCTCTTGG TCATGTTTAC TTTCAAACCT 16500
 AGCCGTTTCT CAATAAACGA CTGACTGAAT ACATC 16535

(2) INFORMATION FOR SEQ ID NO: 75:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 8136 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 75:

CCAGAGCGTT GCGTCCGAAA GTCTATCCAG ACACGGCTCT TAAAAACAA AAGGAGAAAT 60
 GATGCATACT TATTTGCAAA AGAAAATTGA AAATATCAAA ACAACCTAG GTGAAATGTC 120

618

AGGTGGTTAC CGTCGTATGG TTGCGGCTAT GGCTGATTTA GGATTTTCAG GAACTATGAA	180
GGCTATCTGG GATGACCTCT TTGCCCATCG TAGTTTGGCC CAGTGGATTT ATTTGCTGGT	240
TTTAGGAAGT TTTCTCTCT GGCTGGAGTT GGTTTACGAA CATCGTATTG TTGACTGGAT	300
TGGGATGATT TGTAGCTTGA CAGGGATTAT CTGTGTAATC TTTGTATCGG AAGGTCGAGC	360
AAGTAATTAT CTTTTTGGCT TGATTAACCT TGTTATTTAC CTTATTTTGG CCCTACAGAA	420
AGGCTTTTAT GGTGAGGTGC TGACGACACT TTACTTCACA GTCATGCAGC CAATTGGACT	480
TCTAGTTTGG ATTTATCAGG CACAGTTTAA GAAGGAAAAG CAGGAGTTTG TCGCGCGTAA	540
ACTGGACGGC AAGGGCTGGA CAAAGTATCT TTCCATTAGT GTGCTTTGGT GGTGGCCTT	600
TGGCTTCATT TATCAGTCTA TTGGTGCCAA TCGTCCCTAT CGTGATTCAA TCACAGATGC	660
AACCAATGGG GTAGGGCAAA TCCTCATGAC AGCTGTTTAC CGTGAACAGT GGATATTCTG	720
GGCGGCTACC AATGTCTTTT CAATCTATCT CTGGTGGGGA GAAAGCCTGC AAATTCAAGG	780
GAAATATCTA ATTTATCTCA TTAACAGTCT AGTTGGTTGG TATCAATGGA GCAAGGCAGC	840
TAAGCAGAAT ACTGATTTAC TTAAGTAGGA AAAGATGTTT GAAAGTGCTG TTTTGAGATT	900
TCGATTAAAA CAGATATAGT TGATAATCAA GGATTTATAG TATGAAAAAG AGGATCGGCG	960
GGTCCTCTTT TGTTGTTGAA AAGATAAAAA ACTCAGTAAC CTAGAAATAA GACAACTGAA	1020
GCTTTACTCT ATATTCAATT TTTAGGAATG AGAAGGTCTA GATAAAATTG GACAACTTCC	1080
TGGTCTGTGA AATCTTGACC TTTTTTGAGC CACCAGGTCA ATGTCTCGAT AAAGTTGGAC	1140
ATGACCAAGT GTTGAGGTA AGAAGTAGGC AGATTAGGGT GGGCTTCTTT TAAATTATCA	1200
GCTAGCACGG AATAGACATG GTGTTCTAGC TCTTTATGGA GTTGACGGAG GAAGTAGTCA	1260
TTTTTGGAAG ATAGCAGACT GGTGATATGG TCTTGTTTTT TATGAAAATG GAGAAAGAGG	1320
TGGGCGAGGT AGTCCTCGGT TGAAATGGCT TGCTCTCTTT CAAAAGATG ATGGAAGAGG	1380
TAGCGGCAGA GCTGGTCCAG AAGAAGCTCC TTACTCTCAT AGTGACAGTA AAAGGTGGAT	1440
CGTCCCACAT CTGCGAGATC AATGATATCC TGAACAGTAG TGGCCTCGTA GCCCTTAGCA	1500
TTCAAAAGTT GTATAAAGC TTGATAGATG GCTTTTTTGG TTTTGCTGAT ACGGCGGTCA	1560
ATGTTAGTCA TATGGACACT TAAGGCAAAT TGTTTCAAGC TGAATAAAGC TGACGTTTGG	1620
CTTCTATCCT TTCTTTGAGT TTTAGTGGAT AATGATAATG AACAAGGTGT TCATAAATCT	1680
ATTATAACAA AGGAATGAGA AATATGAAGG CAAAATATGC TGTTTGGGTG GCTTTTTTCT	1740
TAAATTTGAC TTATGCCATT GTTGAGTTTA TTGCAGGTGG AGTATTTGGT TCTAGCGCTG	1800
TTCTTGCTGA CTCTGTGCAT GACTTGGGAG ATGCGATTGC AATTGGAATA TCAGCTTTTC	1860
TAGAAACAAT CTCCAATCGT GAAGAAGACA ATCAGTACAC CTTGGGCTAT AAGCGGTTTA	1920

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GCCTGCTAGG AGCCTTGGTA ACAGCTGTGA TTCTCGTAAC GGGCTCTGTT CTAGTCATTT	1980
TGGAAAATGT CACGAAGATT TTGCATCCGC AACCAGTCAA TGATGAGGGG ATTCTCTGGT	2040
TAGGAATTAT TGCGATTACT ATCAATCTGT TAGCGAGTCT GGTGGTTGGT AAGGGAAAAGA	2100
CAAAGAATGA GTCTATTCTG AGTCTGCATT TTCTGGAAGA TACGCTAGGG TGGGTAGCTG	2160
TTATCCTGAT GGCGATTGTT CTTCGATTTA CGGACTGGTA TATCCTAGAT CCTCTTTTGT	2220
CCCTTGTCAT TTCTTTCTTT ATTCTTTCAA AAGCCCTTCC ACGTTTTTGG TCTACACTCA	2280
AGATTTTCTT GGATGCTGTG CCAGAAGGTC TTGATATCAA GCAAGTAAAG AGTGGCCTGG	2340
AGCGATTGGA CAATGTGGCC AGCCTTAATC AGCTTAATCT CTGGACTATG GATGCTTTGG	2400
AAAAAATGC CATTGTCCAT GTTTGTCTAA AAGAAATGGA ACATATGGAA ACTTGTAAG	2460
AGTCTATTCTG AATTTTCCTA AAAGATTGTG GTTTTCAAAA TATTACCATT GAAATTGATG	2520
CTGACCTAGA AACTCACCAA ACCCATAAGC GAAAGGTGTG TGACTTGGA CGGAGTTATG	2580
AGCATCAACA TTAGAAAAA GTGAAAAATA CTGGGTACT ATCTTATTTG GAATAGAGTA	2640
ATTTCTTTAT TATTTAAATA TTTCAAAAAT TGGTAAGAGA AGAGCATGTG ATAACTCCA	2700
GATATATGAT TGTTAATGAT AAAAATTTTT CGATTAGATA CAAATGCCT GACTTGAGT	2760
CAACTCAAAG TTATATAATA AGATAAGTGA GTTAGAATAG CGTGAATTCA GTGAATGAAA	2820
TGAGAGGAGG TTAGCGTGTG AATATTAAAT CTGCCAGTGA TTTGTTGGGA ATTTACGCGG	2880
ATACGATTCG GTATTATGAA CGGGTTGGTC TTGTGCCACC GATTACTCGT ACTGCTACTG	2940
GGATTCGTGA TTTTCAAGAT CAGGATATCG AAGCGCTGGA ATTTATTAAG TGTTTTCGTT	3000
CGGCGGGTGT CTCTGTAGAT AGTTTAGTTG ACTATATGTC GCTCTACCAA AAGGGAGATG	3060
AAACGAGAGA GGAGAGGCTT GGTATTTTAG AAGAGGAAAA GCAAAAATTA GAGGAGCGCT	3120
TGTCTCAGCT ACAGACAGCT TTAAATCGTT TAAATCTCAA AATTAAACTT TATAAGGAAG	3180
GAAAATTTTA AATGAAATCA GCAGTATATA CAAAGGCAGG TCAGGTTGGA CTGCTAGCA	3240
TTGAACGTCC GCAATAATA GAAGCGGATG ATGTGATTAT TCGTGTGGTT CGTGCGTGCG	3300
TTTGTGGTTC AGATTATGG AGGTACCGTA ATCCAGAAAC GAAAGCTGGA CACAAAATA	3360
GTGGACACGA AGCGATTGGG ATTGTTGAAG AAGCTGGGGA AGCCATTACG ACGGTGAAAG	3420
CAGGTGATTT TGTGATTGTC CCTTTTACAC ATGGATGTGG TGAGTGTGAT GCCTGTCTTG	3480
CTGGATTGGA CGTTCTTGC GACAATCATA TTGGCAATAA TTTGGGGGGT GATTTTCAGG	3540
CAGAATATAT TCGCTTCCAC TATGCAAACT GGGCGCTGGT TAAATCCCT GGTCAACCTT	3600
CTGACTATAC AGAAGGGATG CTCAAGTCCC TTTTGACTCT TGCAGATGTC ATGCCGACAG	3660

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GCTATCATGC	GGCGCGTGTT	GCAAATGTTC	AAAAAGGGGA	CAAGGTTGTT	GTTATCGGTG
ATGGGGCTGT	TGGTCAATGT	GCTGTCATCG	CGGCTAAGAT	GCGTGGAGCA	TCACAAATTA
TCCTTATGAG	CCGTCAAGAA	GACCGTCAAA	AGATGGCTAT	GGAGTCAGGT	GCGACAGcTG
TTGTTGCAGA	ACGTGGTCAA	GAAGGAATTA	CCAAGGTGCG	TGAAATCCTC	GGTGGAGGAG
CAGATGCAGC	ACTTGAATGT	GTTGGTACGG	AGGCTGCTAT	AGAACAGGCG	CTAGGTGTTT
TTCATAATGG	AGGGCGTATG	GGCTTTGTAG	GAGTCCCACA	CTATAATAAT	CGTGCTCTTG
GTTCGACATT	TATGCAAAAT	ATCTCTGTAG	CAGGTGGGGC	AGCTTCTGCT	ACAACATACG
ATAAGCAATT	TTTACTAAAA	GCCGTCCTTG	ATGGTGATAT	CAATCCAGGT	CGCGTCTTTA
CTTCAAGTTA	TAAACTGGAA	GATATCGACC	AAGCCTATAA	AGATATGGAT	GAACGTAAGA
CAATTAAGTC	TATGATTGTA	ATCGAATAAA	AAACGAATAG	GAGTTTTAGA	ACTCTATTCT
TTTTTTATGT	TATCCTATTC	TTGATTTAGG	GTACTTTCTC	TTAATGTCAG	TCTGGTCCCC
AGCATGGTCA	GGCTAGGGAT	TTTCCGACCG	TGGAGGACTT	CCTTGTTAAG	AATATCCATA
CCTGCTCGGC	CCATTTCTTC	AGTATAAACT	GTAATACTAG	AGAGGGGAGG	ATAGACCTGT
TTGGTCAGAC	TAGTGTCGTT	AAAGGAAATG	AGGCTGACGC	GATCTGGCAG	GCTGATTCCA
GCTTCTTGGA	GGGCACGGAG	GGCACCGATA	GCTAAACTAT	CGCTGGCTGC	GAAAAATGCT
GGCGGAAGTT	GGTCTCCCAA	GCTCTGAATG	GCCTCCTTCA	TTAAGTCATA	GCCAGACTGG
GCAGTAAATC	TTCTTGAAA	GACCAGTTCA	TCATGATAGA	TTCCCCTCGC	TTGACTATAG
TTTTTGAAGT	TTTCTAGACG	CTTGCTCTGA	ATGATTTCTT	CTTGGTCTGT	TGTTTCTTCA
AGGCCTGTTA	GAATCCCGAT	ACGGTCCATT	CCTTGACTGA	GGAAATAATC	GACAACTGT
TTCATAGCAG	TGTAAAAATC	CGTGATAATA	CAGGTATGTC	CCAGGGAAAG	TGTATCGCTG
TCTAGAAATA	CAAGAGGCTT	TTGGTATTCT	TCAAAGGCAG	AAATCTGAGC	TCGACTAAAC
TTTCCGATGC	AGAGAATCCC	AATCACTTCC	TCGCTTAGGG	TAAAAGGGTG	GTCATTAAAA
TAGCGCAAGA	TATCATAGTC	CAACTCTTGG	GCTCTTTTTT	CTATTCCTAG	GCGAATCTGG
TAGTAGTAGA	GGTCGTCCAG	CTCCCCCTGT	TCGCTGACCC	ATTGGATAAT	GGCAATCTTT
TGCTTGGGTT	TGTGGGACTC	GCCTGTCTTG	AGGTGCTTGG	TGTAGCCCAG	CTCTTCAGCA
ACGGTTAAAA	TACGGTGTCT	GGTTTCTTCT	GTAACAGATA	GGCTCTGGTC	GCGGTTGAGG
ACGCGGGATA	CGGTCGCGAT	AGAGACAGAG	GCTAGCTGTG	CAATGTCTTT	TAAGGTAGCC
ATAAATCCTC	CTTGATTAGG	TTAGTATATC	ATGTTTTTCT	TCTTTTTACT	GATATTTTAC
TAAAAATTTA	GTAAAAAGGA	TTGACCTTGG	AAAATTCCTT	GGATATAATA	GAAAGAAAAC
GATTACACGT	TAAGATGGCT	TAACGGACAG	TCAAAGGAGA	ATTCATATGG	CACAACATCT

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TACTACTGAA GCCCTTCGCA AAGACTTTCT TGCTGTTTTT GGTCAAGAAG CAGATCAAAC	5520
CTTCTTTTCA CCAGGCCGCA TTAATTTGAT TGGTGAACAC ACAGACTACA ACGGTGGGCA	5580
CGTTTTTCCT GCTGCTATTT CCTTGGGAAC TTACGGTGCA GCTCGTAAGC GTGACGACCA	5640
AGTCTTGCGT TTCTACTCAG CTAACTTTGA GGACAAGGGC ATTATCGAAG TGCCTCTCGC	5700
TGACCTCAAG TTTGAAAAAG AGCACAACTG GACCAATTAT CCAAAAGGTG TCCTTCATTT	5760
CTTGCAAGAA GCTGGGCACG TGATTGACAA AGGTTTGTAT TTTTATGTTT ATGGAAATAT	5820
TCCAAATGGT GCTGGCTTGT CTCTTCTGTC ATCCTTGGA CTCTTGACAG GAGTCGTGGC	5880
TGAGCATCTC TTGTGATTAA AATTAGAGCG TCTCGATTG GTTAAATCG GCAAACAAAC	5940
AGAAAACAAC TTTATCGGAG TAAACTCTGG CATTATGGAC CAGTTTGCTA TTGGTATGGG	6000
GGCAGACCAA CGTGCTATTT ACCTAGATAC TAATACTTTA GAATACGACT TGGTGCCACT	6060
TGATTTGAAG GACAATGTCG TTGTTATCAT GAACACCAAC AAACGCCGTG AATTGGCGGA	6120
CTCTAAATAC AATGAACGTC GTGCTGAGTG TGAAAAAGCA GTGGAAGAAT TGCAAGTTTC	6180
CTTGGATATT CAGACTCTGG GTGAATTGGA CGAGTGGGCC GTTGACCAAT ATAGCTATCT	6240
GATTAAAGAT GAAAATCGTT TGAAACGTGC TCGCCATGCT GTGCTTGAAA ACCAACGTAC	6300
CCTCAAAGCT CAAGTAGCAC TCCAAGCAGG AGATTTGGAA ACATTTGGAC GCTTGATGAA	6360
TGCGTCACAC GTTCTCTGAG AGCATGATTA TGAAGTAACT GGTTTGGAAT TGGATACCTT	6420
TGTTACACA GCTTGGGCAC AAGAAGGAGT TCTCGGTGCT CGTATGACAG GGGCTGGTTT	6480
TGGTGGCTGT GCcATTGCCT TGGTTCAAAA AGATACTGTT GAGGCCTTTA AGGAAGCTGT	6540
AGGCAAACAC TACGAGGAAG TAGTTGGATA CGCTCCAAGC TTCTATATCG CTGAAGTTGC	6600
AGGTGGCACT CGCGTCCTTG ACTAGTCAAA AGGAGGCTCT ATAGTGACCT TAGTAAATAA	6660
ATTTGTAACA CATGTCATTT CTGAAAGCTC ATTTGAGGAA ATGGATCGAA TCTATCTGAC	6720
CAATCGTGTT TTGGCACGAG TGGGAGAAGG TGTMTTGGAA GTTGAGACCA ATCTGGATAA	6780
ATTGATTGAC CTCAAGGACC AGCTGGTTGA AGAAGCCGTT CGATTAGAGA CGATTGAGGA	6840
TAGTCAGACT GCGCGTGAAG TCCTTGGTGC TGAAGTGATG GATTTGGTGA CTCCTTGTC	6900
AAGTCAGGTC AATCGTGATT TTTGGGCAAC CTACGCCAC TCTCCAGAAC AAGCGATAGA	6960
GGATTTTAC CAACTCAGTC AGAAAAATGA CTACATCAAA CTCAAGGCCA TTGCTAGAAA	7020
TATCGCTTAT CGTGTTCAT CTGACTACGG AGAACTTGA ATTACCATCA ATCTCTCTAA	7080
GCCTGAAAAA GATCCCAAAG AGATTGTGGC AGCCAAGTTG GTGCAAGCTA GTAATTATCC	7140
TCAGTGTCAG CTTTGTCTAG AGAATGAGGG CTACCATGGT CGAGTTAACC ACCCAGCTCG	7200

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TAGCAATCAC CGTATTATCC GTTTTGAAAT GGTTGGTCAG GAATGGGGTT TCCAGTATTC	7260
GCCCTATGCT TACTTTAATG AGCATGTAT CTTTTAGAT GGCCAGCATC GTCCCATGGC	7320
CATTAGTCGT CAGAGTTTGG AACGTCTGTT GGCTATCGTA GACCAGTTTC CAGGATATTT	7380
TGCTGGATCT AATGCCGACC TGCCGATTGT GGGGGGCTCT ATTCTAACTC ATGATCATTA	7440
TCAGGAGGC CGTCACGTAT TTCCTATGGA ATTGGCTCCC TTGCAAAAGG CCTTCCGATT	7500
TGCTGGTTTT GAGCAGGTCA AGGCTGGAAT TGTCAAGTGG CCCATGTCTG TCCTACGTTT	7560
GACTTCGGAT TCCAAAGAGG ATTTGATCAA TTTGGCTGAT AAGATTTTGC AGGAATGGCG	7620
CCAGTATTCA GATCCTGCAG TGCAGATTTT GGCAGAGACA GACAGGACAC CGCATCACAC	7680
TATCACACCC ATTGCCCGCA AACCGGATGG ACAGTTTGAG TTGGACTTGG TCTTGCGAGA	7740
CAATCAGACT TCAGCAGAGT ATCCTGATGG TATCTATCAT CCCCACAAGG ATGTCCAACA	7800
TATCAAGAAG GAAAATATCG GCTTGATTGA GGTCATGGGC TTGGCAATCT TGCCACCACG	7860
TCTGAAAGAA GAAGTGGAGC AAGTCGCTAG CTATCTTGTA GGAGAAGCTG TTACAGTTGC	7920
CGATTATCAT CAGGAGTGGG CAGACCAACT CAAATCCCAA CATCCAGACT AACGGATAAA	7980
GAAAAAGCCC TTGCAATCGT CAAGGACTCT GTGGGTGCTA TCTTTGCGCG TGTAATTGAG	8040
GATGCAGGAG TCTACAAGCA GACAGAACAA GGCAGACAG CCTTTATGCG CTTTGTGGAA	8100
CAGGTCGGAA TTTTACTAGA CTAGGAGCTT TCTCGG	8136

(2) INFORMATION FOR SEQ ID NO: 76:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 10011 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 76:

CCCATAGTGA AGAGTGGCCA TAAGAAGGTC TTCTAGGCTT AATTTAGGTT TTCGTCCACC	60
TTTTGCGTGT TTAAGTTGAT AAGCTGTTTT TAACACAGCT GAACATCTCT TCAAAAGTCG	120
TGCGCTGAAC ACCAACAAGA CATTTAAATC GTGTATCAGT TAGTTGTTTA CTTGCTTCAT	180
CATTATAGTA ACTACTATAC CATGTTTTGT TTCGCAGGAA GTCTAATATT GTCAAATACT	240
GGAACGCTCA TTGCTGGGAT ACGGAATAAG ATTGGCCCAG CTTGATAAC TGGGATACCT	300
GGTTCAAAAC CAAGGTCTGT TGCAGCGATT GGTGTAAAGA TATCGTAACC TTTCATAAGG	360
TCTTCGTTTA CATCTTTCAC CATAACTGCA TCACAGTGAA CATCGTAACC ACGGTTTGAA	420
AGTTCTTCTT CTAGAGCACT TTTAATTTGG TGAATTGAGT TAACACCTGC ACCGCAGGCA	480

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GCAAGAATTT TAATCATTTG GATTTCCTCC GATTTTATTT TTTAATAGAC AAGATTAAGC	540
GGTTGCTTCA GCAATGTAAG CATAAAGGGC TTCTGGTTCA GAAATTTTTC ATAGGTCTTC	600
AAGATGACCA TTTCTGTGA AGAAGTCCAT TAACTGAGCA AGAATGTTTCG TTTGACTTGA	660
ACTTGAATTA TTGATGATAA AGAAGAGCAA GGATACTTCT ACTTCCTTAC CTGGCGCAAT	720
CATATTATGG AAAGTCACCG GTTCTCTTAA TCGAACAACC ACCACTTTCT CAGCTAGATT	780
ATGAACAATA TCTGTGTGAG GAATCATTAC ATTTGCAAGT CCTTTCCTAG AAATTCATA	840
TATAAACCG TTGGAAATGA CTTTTCACGC GTGATCAAGG CTTACGATA AGTTGGAGTG	900
ACAATTTCTC GTTCTTCCAA CAAGCTTGCT ACCTGATCAA AAAGTTATTC TTGATTATCC	960
GCTTCTAAGC AAAACACAAG GTTTTTGTCA AAGAAATAAT CTAATACCAT AAGGTTTTCC	1020
CTTCTTTCCA TTAACCTTAT GCTATAAGTA TAACACTATA TGAAATCGTT GTTAATTACT	1080
TTCTATTCTT TTTTGTCTCT TTTTTTATAT TTTTGTTTTG TTTATAGTTT GTTATATAAA	1140
AATAAACACA CAAACAAATA CTCCAAGCAT TTTTCTGTTC TAATACTCAA TGAATCAAA	1200
AGAGCAAAC AGGAAGCTAG CCGCAGTTGT TCAAAACACA GTTTTGAGGT TGTAGATGAA	1260
ACTGACGAAG TCACTCAAAA CATGGTTTTC AGGTTGTAGA TGAACTGAC GAAGCAACAG	1320
CCATACATAC GGTAAGGCGA CGCTGACGTG GTTGAAGAG ATTTTCGAAG AGTATAAAAA	1380
CTAAAAAGC AGACCATCTA AGCCTGCTTT ACTATTGATT CTTATATAAA TTTCTGTGA	1440
ACAAGGAAAG GCATTTCTGA TAACTTATTC TTCATCCATA CTCAAGACGC TGAGGAAGGC	1500
TTCTTGCGGA ACTTCAACTG ATCCGATGGA TTTCATGCGT TTCTTACCAG CTTTTGTGT	1560
TTCAAGGAGT TTACGCTTAC GAGAAACGTC ACCACCATAA CATTTAGCAA GTACGTTCTT	1620
ACGAAGGGCC TTGATATCAG TACGAGCGAC AATCTTGTGT CCAATAGCCG CTTGGATTGG	1680
AACCTCAAAT TGTGCGGAG GGATGATTTT CTTGAGTTTA TCAACGATGA GTTTCCACG	1740
TTCGTAGGCA AAGTCCTTGT GAACGATAAA GCTGAGGGCA TCCACCTTAT CTCCATTGAG	1800
AAGAATATCC ATTTTCACCA GCTTAGATGG GCGATATTCT GACAATTCGT AGTCAAAGCT	1860
TGCATAACCA CGTGTCGAAG ACTTAAGTTT ATCAAAGAAG TCAAAGACAA TTTGAGCAAG	1920
AGGAATTTGA TAGATAACAT TGACACGGTT ATCATCAATA TAGTCCATAG TCACAAAGTC	1980
CCCACGCTTA CGCTGAGCTA GCTCCATTAC TGCTCCGACG AACTCCTGTG GTACCATGAT	2040
TTGCGCCTTG ACATAAGGCT CTTCAATGGT CGCAATCTTA GTTGGGTCTG GAAACTCAGA	2100
TGGGTTAGAC ACATCCATAG ACTCACCGTC GGTCAAATTA ACTTTGTAAA TAACAGACGG	2160
AGCTGTCATG ATGAGGTCAA TATTGAACTC ACGCTCTAAA CGTTCCTGGA TAACATCCAT	2220

624

ATGGAGAAGT CCAAGAAATC CACAACGGAA ACCAAATCCA AGTGCCTGAG ATGTTTCTGG	2280
TTCAAACCTGA AGACTAGCAT CATTTCAGTTG CAATTTTTC AAGGCTTCAC GCAGGTCATT	2340
GTACTTGTTT GATTTCGATTG GGTAGAGACC CGCAAAGACC ATAGGATTCA TCTGCTTATA	2400
ACCATGTAAT GGTTCCTGCCG CAGGATTGGT TGCCAAGGTA ACGGTATCAC CCACACGAGT	2460
ATCCTGAACC GTCTTGATAG ACGCCGCAAT GTAACCAACA TCACCAGTCG CAAGGAAATC	2520
ACGACCAACC GCTTTTGGTG TAAAAATACC GACTTCGGCC ACATCAAAGG TCTTACTATT	2580
GCTCATGAGC TGAATCTTAT CACCAGGTTT GACCACTCCG TCCATGACAC GCACTTGGAG	2640
GATAACCCCA CGGTAAGCAT CGTAAACAGA GTCGAAAATC AAGGCCTTAA GTGGCGCCGT	2700
CACATCACCC GTTGGTGCTG GACTTTTTC TACAATTGC TCGAGGATTT CTTCAATCCC	2760
AATACCAGCC TTGGCAGAAG CCAAACTGC TTTACTGGCA TCCAAACCAA TCACATCTTC	2820
AATCTCTGTA CGCAGCGCT CCGGATCTGC AGCCGGCAGG TCAATTTTAT TAATGATAGG	2880
CATGATTTCC AAATCATTAT CCAAAGCCAG ATAAACGTTG GCAAGAGTTT GAGCCTCAAT	2940
TCCTTGAGCC GCATCGACCA CCAAATAGC ACCCTCACAG GCAGCTAGCG AACGTGAAAC	3000
TTCATAGGTA AAGTCAACGT GCCCTGGTGT GTCAATCAAG TGGAAAATAT AAGTTTCCCC	3060
ATCTTTTGCA GTGTAATTCA ACTCGATGGC ATTCAACTTA ATAGTAATTC CACGTTCCCG	3120
CTCTAGCTCC ATGCTATCCA AAAGCTGGGC CTGCATTCA CGACTTGAAA CCGTCTCTGT	3180
TTTTTCCAAA ATGCGGTCTG CTAGAGTTGA TTTTCCGTGG TCAATATGGG CGATAATAGA	3240
GAAGTTACGG ATCTTCTCCT GTCGTTTTTT CAATTCTTCT AAGTTCATGA TTCTCTTCCT	3300
TTCAGGGTAT CTATTTATTA TAAATTGTTT TTGATATTTT GACAAGACCA TACCCTGCTA	3360
GGAGTACTAA TCTTCAGCGA CAAAGCCGTC ATTTTCGATA AAGTGGTGTT CTGTCATTCC	3420
TTGGTCTGTA AAGACAATCC CGTGAAGGAC ACCACCATAA ACAGCTCCTC CATCCATTCC	3480
AATCTTGCCA TCTTCTGTAG TCCAAAGCTC AGATGTACCG CGTTCTTGCT GTAACAAACC	3540
ATAGACCGGT GTATGACCGA AGACAATGGT TTTTCCAGTA TGATTTTCAG CTCCGTGGAA	3600
TGGTTTTCTA AGCCATACTT TTTTATAATC TGTGTTTCA TGCCAGTCGT CCAAGGTCAA	3660
ATCAATACCT GCGTGAACAA AGATATACTT GTCTGTCTCT ACTACAAATG GCATTTGACG	3720
AATGAATTCG ACCAAGTCTG CCGCTTCAGC GgCAACCCGC TTGGCATCTT CTAATCCATC	3780
AACTGGTGCA TCCAAGGGAC GACCTAGGAT AGAGTTAATG GTTGATCTC CACCATTGCG	3840
ACTATAATGG TCATAACTTT CTTCTGGGTC ATCTAGCCAA GTCAAAAACA TATACTCGTG	3900
GTTTCCGGAC AAACAGATAG CCCCTTGATT GTCCACCAAG TCCTTGACCA TTTCAAGAAC	3960
ACGGTGACTA TCCTCACCTC TGTCAATCAA ATCACCTAGA AAGAGCAACT GGGGCTGACC	4020

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ATCCCAGGTT TTGAGAAGGT CTTCCAGCAT CCCAGCTTTT CCGTGAACAT CTCCAATTAC	4080
ATAATAATCT GTCATCTTAT TTCTCCCTGT TTCTCAACAA TTCTCTTGCT TGCCTCAGGG	4140
CTGCTTCTGT CACATCATCA CCTGCCAACA TCTTGGAAC TTCCTCCACT CGCTCTTCGA	4200
CCGTCAAGAG ACGAACAGTC GAAACCGTTG AATGGTCATT ACTAATCTTC TCAATAAAGA	4260
ATTGATAATC TGCAATCGCA ATTACTTG TG GCAAATGGGA GATAGCCAAA ACCTGACCAT	4320
GCTGACCAAT TTTATGAATT TTCTGAGCAA TAGCTTGAGC AACACGACCT GAAACTCCCG	4380
TATCCACCTC ATCAAAGACA ATGCTAGTCT TGCCTTCTTT ACGTGAAAAG GCAGACTTAA	4440
TGGCTAACAT GAGACGAGAT AATTCCCCTC CAGAAGCAAC CTTAACCAAG GGTTTAAAGT	4500
CTTCTCCAGG GTTGGTTGAA ATATAAACT CAACCATTTT ATTTCCCTCA CGACTGAATT	4560
TTCCCTTACT AAAACGAACC TGAAACTGGG CTTTTTCCAT ATAAAGATCT TGCAGTTCTT	4620
GTTTAATCTC AGCTTCGAGT TGCTGAGCCA AATTATGACG AGCAGAAGCA AGTTGACCTG	4680
CCAAATGAC AAGATTGACT TCCAACTTCT TAAGCTCTGC TTCCATGTCC TCAGACGAAA	4740
GATTATTGCC TGTCAAGAGA TTGTATTCTT CCGTAATCTT GGCAAATAA AGCAAAACAT	4800
CATCAACAGT CCCACCATAC TTACGAGTAA TAGTATGAAG GAGGTCCAAA CGATTCTCAA	4860
CCTGCATCAG GCGATTGCCA TCAAAATCAA GGTCTCAAT GATAGCTTCC AAACGTTTGC	4920
TAATGTCTTC TAAAACATAG TAGGTCTCAG ACAGATAGCT TGAAATTTC ACGGTATTTCAG	4980
GATCATACTC TTCGACACTT TCCATGTCAT TCATAGCTGA ACGAACATTG GCCAGACTTG	5040
AAAAATCTTC ATTGTCCAAC ATACTGTAGG CATTGGTCAG TGTATCCGCA ATATTTTGT	5100
GGTTGAGGAG TTTATCTCGC TCTTGATTGA GAGCCAAGTC TTCTCCAGCC TGCAAGTTTG	5160
CTGCCTCAAT CTCTGCCATT TGAAATTCCA ACATTTTCGAT ACGTGCCTTG TGTTCTTGTT	5220
GGTTTTTCTT GACTTCCAGA ACCTGCTTGC GCATTTTCCG ATAGGCATCA AAACCTCGTT	5280
GATAGGTTTC TTTCAAGTCC CAAAAGCGG CATCACCAA TTCATCCAAC ATCTGGATAT	5340
GCAGTTGGGG ACGCATTAAC TCCTCATGGT CATGCTGACC ATGAATATCT ACAAGATGTT	5400
GCCCAATAGC TCGAAAACA GACAGATTAA CCATCTGACC ATTTACACGG CTGATACTAC	5460
GACCATTTTG CAAGATTTCC CGACGGATGA TAATTTTCATC ACCTAATTCT AAACCTTGCT	5520
CATCAAAAAT TTCTGTAAA AGACGACTAT TCTCAACTGA GAAAAGCCCC TCAATCTCTG	5580
CCTTTGGTGC ACCATGACGA ATAACATCTG TCGTCGCACG AGCTCCCAAC ATCATATTCA	5640
TGGCATCAAT GATAATCGAC TTCCCTGCAC CCGTTTCACC AGTCAGGACA GTCATCCCCT	5700
TTTCAAAATT GAGGGAAATA GCCTCAATAA TGGCAAAGTT TTTTATCGAA ATTTCAAGTA	5760

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ACATATAGAC CTACCAATTT TTTACTTGTT CAAAGATTTC CTCTGCTAGA CTTCCACTTC	5820
TGGCAATGAC TAAAATCGAG CTATCATCAG TCAAACAGCT AAAAATCTTG TCTGCAAAAG	5880
TCTCGATTAA CTGAGCTTTT ACAAAGCCG TATTTCTCTGG AATAACTTGG AGATTGATCA	5940
TCTTATCCAT CAATTCAGCC GATTTCGATAT TGTCTTCAGC CAGTTGCAGA CTTTTTACGA	6000
TTGATTTTGG CAATTCGTAG ACATAGGTGT TGTCTCTCAA AGGAATTTTG ACAATACCTA	6060
ACTCTTTGAT ATCTCGGGAT ACCGTCGCCT GAGTGGCAGT GATACCTGCT TCTTTCAAAT	6120
GTTCTACAAT TTCTTCTTGC GTGCCGATTT GATAATCTGT CACCAATCTT CTAATTTTTT	6180
CAAGTCTCTC TTTTTTATTC ATTTTAAAT TGACTATGCG CCCTCTCTAC TGCTTCTTTA	6240
ATCTCAGCAA GAATCTGATT GCTTGCTGAC TTTTCTTTTT TCAAATACGC TAAAAATCA	6300
ATATTTCCAT GTCCACCTTG GATGGGAGAA AAGTCCAAGC CAAGGACTGA AAAACCTACC	6360
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ATTCCATTTT TCCCAATCTG CTCACGTCCT GCCTCAAAC GAGGTTTGAC AAGTGCTACC	6480
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CCCTTGAGTT TTAATTCGGT GTCATCTGGA ATTTTCTCTC CTGGCTTGTC AAACCGTTCT	6900
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TAATTTTCA TTAGCTTGAT CCAGGGTTTG GTTACAAAAG GCAATGGACT CTTCCAAGCC	7140
CAACAGGGCA GGATAGGTTG ATTTTCTGCTG CTGCAGATCC TTTTGAGGTG TCTTGCCGAT	7200
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ACCCAGACTA CCTGAAGCAA GGGATAAGTT GGCAATCAAG TCCACCTTAA TCTGACTTGG	7500
CAATCTGCC TGCCTAATCA AGGCATATGA GTCTAAGAAT AAGGCATCTC CAGCCAAAAT	7560

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ACTAGAGGCA AACTGCTGGT CTCCTAAAA ATCTTCCAAA GCCGACTCGA CAAGAGCTAA	7860
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CGAATCTACA ACGGACTCTT CTTTTTGGAC AATAGCATAA CCACGCGCCA CGATTGCGCT	8220
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AACTAACGCC ATTTGGCTAC CTAAGAGCTT GTCCAACGT CCTAAACGGT CTTGATAGCG	8340
TTGGATTTTG GTAACAGGTG ATAATTGTAC TAATTGATGA GTTCTTGCTT GAACTAATTG	8400
TTTGTTATCA GAAATCCGAG TTCGCAAAT TTGTTTCAAA CGCAGTTGCA GTTGGTCCAA	8460
GCGTTGCAAA TAACCGTCAT ACAAGCGCTC AGGTTGTCTA AAGATAACAG ACTGACTGCA	8520
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CTTCATTCCT TCTTCCAGGT CAAACCCTAA TTTCTGATAA ATCCCAGACC AGATGGTCGC	9240
TTGAATAACT GCATGGTCAT CCTTTAGGGA GAAATATTGG TGAGTAGGTC GTTTACGAAA	9300

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GTTGGAACT TGACCAGTTA AATAGACCCG TTCCAAGTAT GGGTCTTTAT CGAATTTTCAT	9360
TTTCAGATAC TTGGTCAAAG TTGTTACCGA TAAATACTTT TCCATCTCCA CCTACTATTC	9420
ATTTACTTGC TCTTTCATGG GTATTATTAT ACCAAAAATA TGCCTAAAAA TCTCCATTTA	9480
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GGTGGTACAT TGGTTTGACC ACACCTAAGT ACTGGTTAAT AACGCTATCA AGGCTACGGC	9720
CACGCTCCTC CATATCACGC TTGATACGAC GAATAATGCG CACATCGTCA TCCGTATCCA	9780
CAAAAATCTT GATATCCATC AAATCGCGCA GACGCTTGTC CTCCAAGACC AAAATACCTT	9840
CAACGATAAA GACATCTTGA GGTTCCTGAC GATAGGTCTT GCTACTCCGT GTATGCTCTG	9900
TATAGTCGTA GGTGCGGATG TCCACCGGAC GCCCTGCCAA CAATTCCTTA ATCTGCTCGA	9960
TCATCAAGTC TGTATCAAAG GCAAAAGGAT GGTCAAGTT GGTTTTGACG G	10011

(2) INFORMATION FOR SEQ ID NO: 77:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 5365 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 77:

CGTGTGGTCT TAAAAATAGA AGACAAAGAA CAACTGTTG GAGGCTTTGT CCTTGCAGGC	60
TCAGCCCAAG AAAAAACCAA AACAGCTCAA GTTGTGGCTA CTGGACAAGG TGTTCTGACC	120
TTGAACGGTG ACTTGGTTGC TCCAAGTGTT AAACTGGAG ATCGTGTCTT AGTTGAAGCC	180
CACGCAGGTC TTGATGTCAA AGATGGCGAT GAAAAGTACA TCATCGTAGG CGAcTAACAT	240
TTTGGCAATC ATTGAGGAAT AGAAGGAGAA AGTAAGTATG TCAAAAGAAA TTAAATTTTC	300
ATCAGATGCC CGTTCAGCCA TGGTTCGTGG TGTCGATATC CTTGCAGACA CTGTTAAAGT	360
AACCTTGGGA CCAAAAGGTC GCAATGTCGT TCTTGAAAAG TCATTGCGTT CACCCTTGAT	420
TACCAATGAC GGTGTGACCA TTGCCAAAGA AATCGAATTG GAAGACCATT TTGAAAATAT	480
GGGTGCTAAG TTAGTATCAG AAGTAGCTTC TAAACCAAT GATATCGCAG GTGACGGAAC	540
TACCACTGCA ACAGTCTTGA CCCAAGCTAT CGTCCGTGAA GGAATCAAAA ACGTCACAGC	600
AGGTGCAAAAT CCAATCGGTA TTCGTCGTGG GATTGAAACA GCAGTTGCCG CAGCAGTTGA	660
AGCTTTGAAA AACAACGCCA TCCCTGTTGC CAATAAGAA GCTATCGCTC AAGTTGCAGC	720

629

CGTATCTTCT CGTTCTGAAA AAGTTGGTGA GTACATCTCT GAAGCAATGG AAAAAGTTGG	780
CAAAGACGGT GTCATCACCA TCGAAGAGTC ACGTGGTATG GAAACAGAGC TTGAAGTCGT	840
AGAAGGAATG CAGTTTGACC GTGGTTACCT TTCACAGTAC ATGGTGACAG ATAGCGAAAA	900
AATGGTGGCT GACCTTGAAA ATCCGTACAT TTTGATTACA GACAAGAAAA TTTCCAATAT	960
CCAAGAAATC TTGCCACTTT TGGAAAGCAT TCTCAAAGC AATCGTCCAC TCTTGATTAT	1020
TGCGGATGAT GTGGATGGCG AGGCTCTTCC AACTCTTGT TTTGAACAAGA TTCGTGGAAC	1080
CTTCAACGTA GTAGCAGTCA AGGCACCTGG TTTTGGTGAC CGTCGCAAAG CCATGCTTGA	1140
AGATATCGCC ATCTTAACAG GCGGAACAGT TATCACAGAA GACCTTGGTC TTGAGTTGAA	1200
AGATGCGACA ATTGAAGCTC TTGGTCAAGC AGCGAGAGTG ACCGTGGACA AAGATAGCAC	1260
GGTTATTGTA GAAGGTGCAG GAAATCCTGA AGCGATTCT CACCGTGTG CGGTTATCAA	1320
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CAAATGTGTA GGTGGTGTAG CGGTTATTAA GGTTGGAGCC GCAACTGAAA CTGAGTTGAA	1440
AGAAATGAAA CTCCGCATTG AAGATGCCCT CAACGCTACT CGTGCAGCTG TTGAAGAAGG	1500
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TGCTGAGCTT GGTATAGGAT TTAACGCAGC AACTGGCGAG TGGGTTAACA TGATTGATCA	1740
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GCGCTTGATA AGTTTGATGA GATTATTGGT CGCTTCCGGT TTGGCGTTAG AATAGTGTAG	2160
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ATAAAATCGC TTATCACTCA GTTTACGGCT ATCCTGTTGT ATGAGCTTCC AGTAGCGCTT	2460

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GATAGCCTTG TATTCATGGG ATTTTCGATC CAATTGGTTC ATAATTGAA CACGCACACG	2520
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CGAACGGCTC TATCGTAGCG AAGAAAGTGA TTTCGGATGA CAGCTTGTGT TCTGCCTTCA	2760
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GATTGATGCT ATGTGGAAT ACAAAAAAT GTTTTGTATA CGAAGTTGAC CTGTATTTT	3780
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GGAATAAAGA CATTAATAAA TAACAGTATA TCTATTGTT TTATATATT TACGAATTCT	3900
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GAGAAAGGAC CACGTCCATT GTTAATCCAA TCAACAAGAA TTTTGACATG TTCTTTTAAA	4140
ATATAGTCCA AGTCATCAGA ATAATTCATT TTGCGTTTGT GACGCTCGTA CTCTTCAACG	4200
TCCAAGAGAC GTTTTCCCC ATCTGTAAAA ATTTTAACAT CCAATCGTA ATCAATATAC	4260

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TTCAGTGCTT CTTTCATCCAG ATAGTAGGGG CTAGCCATAT TGCAATAGTA AGAAGTTCCA 4320
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CGAAAAATCG TAGCCCTTTC GTGCTAAAAC TTGAGTTAAA CGCTGCTTCA GTTCGTATCC 4740
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CTCTTTCAAT TCCTCTTCGC TTATCACCTT ATCTCTCGAT AACATAAAAC GAACAATTGT 5340
GTCTTCGGTG ATATAGCATT TGTCG 5365

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(2) INFORMATION FOR SEQ ID NO: 78:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3636 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 78:

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TTTCCAGAAA GAAGTTGAGT AAAGTCTTTA TCAAAGAGAA TGACTTCCGT ATTGGAAGTG 60
ACATTAGGTT TTATTTCTAC TTTACTAGCG TCCGCCCTAG CATTTCCTAA ATCTTTAATC 120
TCTTCTGTTG CCCTATTTAT AGCCAGCTGA ATAACTGCTT GAGGATTTTC ACTCAGTCCA 180
TGAAGCTTAT CGTCCACCGA AGTATAAAGA CTCGAATGCA TGACTTGTA AATAATCAGA 240

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TTTCCCCAGC	AATTCGACAG	GAGTATCTTC	AACTTTAACG	GTATTGGTTG	ATAAATTAAC	600
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CTGAATCCGC	ATTTTAAGTT	CTTCTAGGTA	GAAAGGTTTG	GTCAGATAAT	CATCCGCTCC	720
CAGTTCAAAT	CCATGTCCCT	TGTCATCCAA	ACTTTCCTTG	GCAGTCATAA	TCAGAACTGG	780
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CATCAAATCC	AGCAAAATCA	AGTCATAGAC	ACCACTCTCA	GCTTCGTAGA	GACCTTCTTC	900
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ACTGTATGCA	AGAGCTGCTG	CCAAGTGGCG	TTTAAAGACA	GCATCTGTTG	CGTGAGTATA	1560
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TTTCATCAATA	AAGCGCTCAA	GGGCTGAAAT	CACTTGAGAA	ACAGCTGAAA	CCACCAGATA	1920
AGACTCTTCC	TTAGCAAGTT	TATCAAGAAC	TGGAAGCAAG	TCTGCATAAG	AAATGTGCCC	1980
TGCCTCAGCC	AACAAACGAC	GTTCTTGAAC	AATTTGCAGT	TTGCTTGTGT	TATCAAGTGT	2040

633

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AGTATTTTCA GTGTTGAGAC GAAGAGCTCC TTCATTTTCA GCAAGAAGAG CTGCGTAGCC	2160
AGGGATTTTCG ATACTTTCAG TTTTCGAGTGT ATCAGGCAAG CCTTTCCAGT TGCTATTGAG	2220
GGGCACCACC CAGAGACGGT TCTTGTCTTC GTTCTCACCG ATGAAGAATT GTTTTTGTGA	2280
AATCTTCAAG ACATCATTTC CAACTTTAAC AGTAAGAACT GGGTAACCAG GCTGTTCCAA	2340
CCAAGAATCC ATGAAGGCTG CGACATCAGC TCCTGACGCT TGACCAAGGG CATCCCAAAG	2400
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AGTAGACAAG ACCTCCTTCT TGA CTCCATC AACTGTATAA TAAGAAGGGT AAATCCCTGT	3360
CATGTTGTCT GTAATTTTAC CAGAAAAGGC AAGAACCAAT TCAACTTGAC CAGCCTCAGC	3420
CAATTCGATA TGAAGGGCTT CATGTGCATG GTCAACTGTA AATGGACGAG CTTGACCTGC	3480
AACTTCTACA GAGGTGATTT CCAAATCTTT TTGGTGGAGG GAGATGCGGT CACTCTGTGC	3540
TTGACCAGTG ATGGTCACTT TCCCAGAAAA AGTCTTGGTC TCACGACTCA AATCTAAAAA	3600
TAAATCATAA TGTTTCAGGAA CAAATTGCTT AATGGG	3636

(2) INFORMATION FOR SEQ ID NO: 79:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 5066 base pairs

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(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 79:

ATAGCGTGTA ATAATCGATT TTAGAGGTAC CATAAGCCAC CTCCTACAAA TAGAAACCGA	60
TATAAATCAA TGCCTTCCAC CCTTAGACTT CCCTAGTTCC TGTCTCAAGC GAAACATTTT	120
TTTGAAACAG GAATAAGTTA ACCAATTCAT ACCAATAGCT AGCAGAATAA AAAGAAACCA	180
AATGCCCCAT AACTTGATAT CTGTCACATT TCTCAAGACG GTATTGAAAA ACAGAACTGA	240
AACAACGTGC CAAGCAAGGC TAAAAAGAGA ATAGAAGGGG ATGTAAAACC AGTAAAATA	300
ATAAAAAATT GGAAAAACT TACTATTTCT GTTGGCCTTT TCAATCCAGT TATCAAAATA	360
AAAGTACGGT GCTAAAAGTA AGAATTTAAA CAAATGTTCC ATCACCAGCA TCCCCCTTC	420
TTTTGATAGC GTTTTCTATT ATTTTATTAT ATCAAAAAA TCCGGAACGT TCATTCCAGA	480
TTCTACTTTT TTATTTGCGT TTTCTTGCGA TGAGATGAAT CGGTGTTCCC TCAAAAACAA	540
AGGCCTTGCG GATTTGATTT TCCAAGAAAC GCAGGTAAGA AAAGTGCATG ACTTCTTCTT	600
CATTGACAAA GATGACAAAG GTTGGTGGTT TGGTGGCCAC TTGGGTCCGA TAGAAAACT	660
TGAGACGTTT TCCTTTGTCT GTCGGTGTG GGTGATGGC AATGGCATCC ATGATGACAT	720
CGTTCAAGAC AGCTGATGGA ATACGTGTAT TTTGACTTTC GCTGATTGTC TTAATCATCT	780
CAGGAAGTTT GTGGAGACGT TGCTTGGTTA AAGCTGATAC AAAGATAATC GGTGCCGTAAG	840
GCAGGTATTG GAACTGCTCA CGGATATCTT CTTCCCAGTT TTTCATAGTG TGGTTATCTT	900
TTTCAAGCGT ATCCCCTTG TTGACCACGA TAATCATCCC TTTACCAGCT TCATGGGCAA	960
ATCCTGCGAT ACGCTTGTCG TACTCACGAA TGCCTTCTTC CGCATTGATG ACCATCAAGA	1020
CCACATCTGA ACGGTCAATA GCACGCATGG CACGCATAAC AGAGTATTTT TCAGTATTTT	1080
CATAAACCTT ACCAGACTTA CGCATACCAG CCGTATCAAT CATGGTAAAC TCTTGACCAT	1140
CTGTATCTGT AAAGTGGGTA TCAATGGCAT CACGAGTTGT TCCAGCAACA GGAAGTACAA	1200
TAACACGGTC TTCTCCAAG ATAGCATTGA TCAAGCTTGA TTTTCCAACG TTAGGACGAC	1260
CAATCAAGCT AAACCTAATG ACATCTGGAT TTTCTTCTC ATATTCATTT GGAAGATTTT	1320
CTACGATCGC ATCTAGCACA TCCCCTGTAC CGATTCCATG GACAGATGAG ATAGGCAATG	1380
GTTCAACCAA ACCGAGAGCA TAGAAATCAT ATATATCATT TCTCATCTCA GGGTTGTCCA	1440
CCTTGTGAC TGCAGGATA ACTGGTTTGT GGGTCTTATA AAGCTTACGA GCTACGTATT	1500
CGTCTGCATC AGTAATTCCT TCCTTACCAG ACACGACAAA AACGATAACA TCTGCTTCTT	1560

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CCATGGCAAT TTCTGCCTGG TGCTTGATTT GTTCCATGAA AGGAGCATCG ACATCATCAA	1620
TTCTCTCTGT ATCAATCATG CTAAAAGAAC GATTGAGCCA CTCACCCGTT GCATAAATAC	1680
GGTCACGTGT CACTCCTTCG ACATCTTCTA CAATGGAGAT TCGCTCACCA GCGATCCGAT	1740
TAAATAGGGT TGATTGCCA ACATGGGAC GTCCTACAAT GGCAATAGTT GGTAGGGCCA	1800
TAATTTCTCA CTTTCTACAA TAATTTCTTC TGTCAAGAT TTTTCTAGT TGAGCTTGGT	1860
TCAGCTTGAC CAAACTGTTT TGCTAGGCGC TGACTCCAGC TTGTGGTCGC ACGCGCCCCA	1920
GCATAGTCAG CCTGAACACG GTCATAAGCT TGGATTGCCT CAGTTGACTG TTCTTGGTAT	1980
TCTTCTCTAA AGACAACATT CTCTAGTGGC AGTCTCGGTT TCATATCATG ATGTTGATTT	2040
GGCACACCCA GTGCCATCCC AAAGACAGAA TAGGTGTAGT CAGGTAGGTT AAAGAGCTCT	2100
GCCACTTCTT CAGACTTGTA TCGAACCAAA CCGATAATCA CACCACCATA GCCCAAGCTT	2160
TCAGCTGCCA ACAAGGCGTT TTGTCCAGCA AGAGCTGCAT CGACCGAACT AATCAAGAGA	2220
CCTTCCACAC CTTGGGGTTG GAAGGTGTCG GTATGAAGTC GGGCTCCCTT TTCTGCTCGG	2280
TTCAAATCTC CGACAAAGAG AAGGAAAACA GCAGACTGGC GAATGGCTTC TTGAGGTACC	2340
AATTCATACA AGGCATCTTT CTCTCTTGA CTTCGTACCA CAATCACAGA GTAGGATTGG	2400
AAATCTTCC AAGATGATGC CATCTGGGCT GCTGTCAAAA TCTCATTTAA GTCTACTTGG	2460
GGAATTTCTT GCTCTTTAAA CCTGCGCACT GAAGTATGAG CCTTCATCAA TTTAATGGTT	2520
TCTGTATCG ACGGTTTACT CCTTCTAAAC GAGTCTCCTC AGCCAAATAA CGGATGCGTT	2580
CCATGACCCG TCTGGCTTCC CAGGTTTCGT CATTTCCATG TTTCACTTTC GCAAAATGCT	2640
TCTCCAAATC TTCAAAGTTG AAGTTGGATG TGAAAAAGGT CGGTAAATTT TCCTGCATCC	2700
GATATGGAG AATGACCTGC AGGATTTTCGT CACGCACCCA AACGGTTGAT TGCTCGGCGC	2760
CAATATCATC TAAATCAGG ACCTCAGACA GCTTAATCTC ATCCACCAAG GTCTTAACAT	2820
TGCCATCACT GATAGCATTT TTGACATCAA TGACAAAGCT AGGATAGTGG AGGAGAGTTG	2880
ATGAAACACC ACGTTTTTCT GATAAATCAT GAGCTAAGGC CGCCACCATG AAATTTTAC	2940
CCACACCAAA GTCTCCATAT AAGTAAAGAC CTTTTCGAAT AGCTGGATAT TGCTCCACGA	3000
AGGCTAGTAG CTTTTCAAAA ACTGGTAAGC GCCCAAATC ATCCAAGTCA ACTTGAGCCA	3060
AACTAGCTTT CTTGAGACTG GCTGGTAGAT TGATTAACCT GAGACGGTTC TTAATAGCCG	3120
CTTCTTTTTC AGCCGCGATT AGCTCAGGAG TTTCTTCATA TGAAACATCT GCATAACCAT	3180
GATTCTTAAC CAAAATCGGC TTGTAGCCTT TGGCAATATA ATCCGTATCC CCACGGAGAA	3240
ACTTGTCACG CTCGGTGATG TACTGATTAA ACTTGGAGAT ACTGCGATTT AATTCCTTTG	3300

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GAGTTAAGGA TTCTTGCTGG ATAAAGGCCG CAACATCAGG GTCCTTCATG ATTTTCTGGA	3360
CCAAATCTTG ATAATAAAAA CGGCTGGGTT GACGTTTGAG TACGTCTCCG ACACTTTCCA	3420
TCTAATCTCC TCCTTTTCT AATCGAGCTA ATAGTTCTTG CTTCTTACGT TCTAGTTCCA	3480
GACGAGTTTC CTCGCTGGTT TCATTCTTAT ATTCAGGATT ACTCCATTTA GGAACATTGG	3540
TTTTTTCTGG GGCAGTCTGA TTCTGTTTTT GTGTTTTTGC TTTCTGCCCT CGATCAGGAA	3600
TTCGTAAGAC GGCCTCTTCT GCCGAATGAA TCTTTTGATA GGCATAGTCA TTGGCTACCT	3660
TCATGGCATA TTTCTCATTG ATATTTGCCG AATCCACCTT ATTAAAGGTC AATAAGAGAA	3720
TAATATTGAT GACTTCGTCC AGTAAGCCCA AGCCAGCCAT CTGTTGCAAG AGTTCTCTTT	3780
CTGTTTGGGT AATGGTTCCC TTGCGTGTTC GCTTGATTTC TGCTAAGAAC TGCAGGGCAG	3840
TTTTACTTTT AGCTTCTTTG ATAATGGTCG CTTCCTAAG ACTAAAGTCA GAGGAACTG	3900
GTTTTTGAGC AATTTTTTCA CGCATGCGTT TGGTTGAAAT AACCTGGGAA ACAGCTGTTG	3960
ACTTGGCCAA TTGATAGGTT TCAAACCAAG TCCATTCTT CTCCTCGGCA ATAGCAAAGA	4020
GGTTAAGAC ATCGGACTGC TCATCCGCAA AACGAAGTCC ATCTCGAGCC ATCAGCTGGC	4080
GAAATGTTC CAACTCAAAA TCATTGGCCA CTTTCTTCTT GAGACCAAGG TCTTCTTGAC	4140
TGCCTAGTTC TGCCAATTCT GGAAAGACTT GATTGAGTGA GACAGGTATT TCTTCACCAT	4200
CAGCACTTTC AACTTTCAAA TCCTCCACAG CTACATCGCC AATCTTTTTC TCTAAGAGTC	4260
TGCGATAAAC AGGATGCCCC AAGAAGTCTT GACTAGATAG AGGAGCATGG AGGGCTAGCT	4320
GATAAACATC ACCCTTTTGA TAGAGGGTCA AGAGATTAAA AGCAGATAAG ATTTTCAATG	4380
ATTTTATCAG TCTATCCATC CCAAAGTTGA GATGGTTGAG AATGCTTGAA AAAAGATATT	4440
CCTTCTTACC ATTATCCCAA AAAGTATTG TATAAAGATA AAGGCTCAGT GCCTCCTGAC	4500
CGATAATCGG GAGGTAGCAC TGTACCAGAG ATGAGGTATC TTGCGACACC CGATTATTCT	4560
TTAGATAAGA AAAACGGTCA ATTGGCTTCA TTTATCTTTC CTTTTTCTTT TTAGAGGACT	4620
GGGTGATTTC TTGGAGCAAG CTCTCTAACT CACTGACATC CTTAAAACTA CGATAGACAC	4680
TAGCAAAACG TACATAGGTA ATCTCGTCCA ATTCAGCCAA CTCCTCCATG ACGAGTGAAC	4740
CAATGTCCTC ACTTTGAATT TCATTTTCAT TTCGACCACG GAGTTTCTGT TCGATACGAT	4800
TGACTACCAT GTTGATTTC TCACTTGACA CAGGACGTTT CTGGGCTGAG CGGATAATCC	4860
CATTAAAGAT TTTATCTCTG GAGAATTGTT CCCGTGTGCC ATCTTTTTTA ACAACCACTA	4920
AGGTTCTTTC TTCTACTCGT TCGTAGGTTG TAAAACGGTG TTGGCATTCG TCGCACTCAC	4980
GTCTTCTACG AATGGTGTTT CCTTCTTCTG CTTGGCGACT ATCGATAACA CTTGACTTGG	5040
TAGCCCCACA TTTTGGACAG GGTACC	5066

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(2) INFORMATION FOR SEQ ID NO: 80:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9607 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 80:

CACCTGAAGT ATTTGAAACA GCTATGGAAA ACATCATGCC TGTACTTGAA GTACGTGCAC	60
GTCGTGTTGG TGGTTCTAAC TACCAAGTCC CAGTTGAAGT TCGTCCAGAA CGTCGTACAA	120
CACCTGGACT TCGTTGGTTG GTAACAATCG CTCGTCTTCG TGGTGAACAC ACAATGCAAG	180
ACCGTCTTGC AAAAGAAATC TTGGATGCTG CTAACAACAC TGGTGCAGCA GTTAAGAAAC	240
GTGAAGATAC TCACCGTATG GCTGAAGCTA ACCCTGCATT CGCACACTTC CGTTGGTAAG	300
ATAGGATGCG AAAGCGTTAA GAAAGTCCCA GAGAAAATAG GGAATCGAAG CAGGTTGCGG	360
TTGCAACCAA TGAGATTCAT CTTTTTCTCC AGACTTTTAG CTTGAGCTCA ACTAAATCAT	420
GATGCTAGGA ACGGTAAGGA TGCAAGGTAA AAATAGGAAA CTGACGCAGT ATTTCGACGAA	480
TACAAGGAGT TTTATCTTTT TCACGCAGCA TCCCGTTCCA GCTCACATCG GCTAACTAAC	540
TTTAGCCCCG GTTCAAATTA GCTAAATCGA TTAGTATTAG CTATAACTCA GCTTACCATC	600
TCGTAAGTTG AAACCAACAA TAGCATGAAA ACATTGAGAA CGGGTAGGTC CTGCCTATCC	660
GTTTTTATTA AAATCGTGTT ATAATAGAAT AGAAATCAAA AATAAATAGG AGAAACAAAC	720
CTCATGGCAC GCGAATTTTC ACTTGAAAAA ACTCGTAATA TCGGTATCAT GGCTCACGTC	780
GATGCCGGTA AAACAACAAC TACTGAGCGT ATTCTTTACT ACACTGGTAA AATCCACAAA	840
ATCGGTGAAA CTCACGAAGG TGCGTCACAA ATGGACTGGA TGGAGCAAGA GCAAGAACGT	900
GGTATCACGA TCACATCTGC TGCGACGACA GCTCAATGGA ACAACCACCG CGTAAACATC	960
ATCGACACAC CAGGACACGT GGACTTCACA ATCGAAGTAC AACGTTCTCT TCGTGATTG	1020
GATGGTGCGG TTACCGTTCT TGA CTACAA TCAGGTGTTG AGCCTCAAAC TGAAACAGTT	1080
TGGCGTCAAG CAACTGAGTA CGGAGTTCCA CGTATCGTAT TTGCCAACAA AATGGACAAA	1140
ATCGGTGCTG ACTTCCTTTA CTCTGTAAGC ACACTTCACG ATCGTCTTCA AGCAAATGCA	1200
CACCCAATCC AATTGCCAAT CGGTTCTGAA GATGACTTCC GTGGTATCAT TGA CTTGATC	1260
AAGATGAAAG CTGAAATCTA TACTAACGAC CTTGGTACGG ATATCCTTGA AGAAGACATC	1320
CCAGCTGAAT ACCTTGACCA AGCTCAAGAA TACCGTGAAA AATTGATTGA AGCAGTTGCT	1380

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GAAACTGACG AAGAATTGAT GATGAAATAC CTCGAAGGTG AAGAAATCAC TAACGAAGAA	1440
TTGAAAGCTG GTATCCGTAA AGCGACTATC AACGTTGAAT TCTTCCCAGT ATTGTGTGGT	1500
TCAGCCTTCA AAAACAAAGG TGTTC AATG ATGCTTGATG CGGTTATCGA CTACCTTCCA	1560
AGCCCACTTG ACATCCCAGC AATCAAAGGT ATTAACCCAG ATACAGACGC TGAAGAAATT	1620
CGTCCAGCAT CTGACGAAGA GCCATTTGCA GCTCTTGCCCT TCAAGATCAT GACTGACCCA	1680
TTCGTAGGTC GTTTGACATT CTTCGGTGT TACTCAGGTG TTCTTCAATC AGGTCATAC	1740
GTATTGAATA CTTCTAAAGG TAAACGTGAA CGTATCGGAC GTATCCTTCA AATGCACGCT	1800
AACAGCCGTC AAGAAATCGA CACTGTTTAC TCAGGTGATA TCGCTGCTGC CGTTGGTTTG	1860
AAAGATACTA CAACTGGTGA CTCATTGACA GATGAAAAAG CTAAAATCAT CCTTGAGTCA	1920
ATCAACGTTT CAGAACCAGT TATCCAATTG ATGGTTGAGC CAAAATCTAA AGCTGACCAA	1980
GACAAGATGG GTATCGCCCT TCAAAAATTG GCTGAAGAAG ATCCAACATT CCGCGTTGAA	2040
ACAAACGTTG AAACCTGGTGA AACAGTTATC TCAGGTATGG GTGAACTTCA CCTTGACGTC	2100
CTTGTTGATC GTATGCGTCG TGAGTTCAAA GTTGAAGCGA ACGTAGGTGC TCCTCAAGTA	2160
TCTTACCGTG AAACATTCCG CGCTTCTACT CAAGCACGTG GATTCTTCAA ACGTCAGTCT	2220
GGTGGTAAAG GTCAATTCCG TGATGTATGG ATTGAATTTA CTCCAAACGA AGAAGGTAAA	2280
GGATTGGAAT TCGAAAACGC AATCGTCGGT GGTGTGGTTC CTCGTGAATT TATCCAGCG	2340
GTTGAAAAAG GTTTGGTAGA ATCTATGGCT AACGGTGTTC TTGCAGGTGA CCCAATGGTT	2400
GACGTTAAAG CTAAGCTTTA TGATGGTTCA TATCAGATG TCGACTCATC TGAAACTGCC	2460
TTCAAGATTG CGGCTTCACT TTCCCTTAAA GAAGCTGCTA AATCAGCACA ACCAGCTATC	2520
CTTGAACCAA TGATGCTTGT AACAATCACT GTTCCAGAAG AAAACCTTGG TGATGTTATG	2580
GGTCACGTAA CTGCTCGTCG TGGACGTGTA GATGGTATGG AAGCACACGG TAACAGCCAA	2640
ATCGTTTCGT CTTACGTTCC ACTTGCTGAA ATGTTTCGGT ACGCAACAGT TCTTCGTTCT	2700
GCATCTCAAG GACGTGGTAC ATTCTATGATG GTATTTGACC ACTACGAAGA TGTACCTAAG	2760
TCAGTACAAG AAGAAATTAT TAAGAAAAAT AAAGGTGAAG ACTAATCCGT CCTCACTCTA	2820
GAAGGAAGTC ACTTAGTGGC TTCTTTTGT CTTTAGAAAA TACCTCTAAA TATGGTAAAA	2880
TAGTAGAAGA ATAATGTGAG GAAAAATGAAT GTCAAATAGT TTTGAAATTT TGATGAATCA	2940
ATTGGGGATG CCTGCTGAAA TGAGACAGGC TCCTGCTTTA GCACAGGCCA ATATTGAGCG	3000
AGTTGTGGTT CATAAAATTA GTAAGGTATG GGAGTTTCAT TTCGTATTTT CTAATATTTT	3060
ACCGATTGAA ATCTTTTGTAG AATTAAAGAA AGGTTTGAGC GAAGAATTTT CTAAGACAGG	3120
CAATAAAGCT GTTTTGTAAA TTAAGGCTCG GTCTCAAGAA TTTTCAAATC AGCTCTTGCA	3180

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GTCTACTAT AGGGAGGCTT TCTCTGAAGG TCCATGTGCT AGTCAAGGTT TTAAGTCCCT	3240
TTATCAAAAT TTGCAAGTTC GTGCTGAGGG TAATCAGCTA TTTATTGAAG GATCTGAAGC	3300
GATTGATAAG GAACATTTTA AGAAGAATCA TCTTCCTAAT TTAGCCAAAC AACTTGAAAA	3360
GTTTGGTTTT CCAACTTTTA ACTGTCAAGT CGAGAAGAAT GATGTCCCTGA CCCAAGAGCA	3420
GGAAGAGGCC TTTCATGCTG AAAATGAGCA GATTGTTCAA GCTGCCAATG AGGAAGCGCT	3480
CCGTGCTATG GAACAACCTGG AGCAGATGGC ACCTCCTCCA GCGGAAGAGA AACCAGCCTT	3540
TGATTTTCAA GCGAAAAAAG CTGCAGCTAA ACCCAAGCTG GATAAGGCGG AGATTACTCC	3600
TATGATCGAA GTGACGACAG AGGAAAATCG TCTGGTATTT GAAGGGGTTG TTTTGTGATG	3660
GGAGCAAAAA GTGACTAGAA CAGGTCGTGT TTTAATCAAC TTTAAAATGA CGGACTATAC	3720
TTCAAGTTTT TCTATGCAAA AGTGGGTAA AAACGAGGAA GAGGCCCAGA AGTTTGACCT	3780
CATCAAGAAG AATTCTTGGC TCCGAGTTCG AGGGAATGTG GAGATGAATA ACTTCACACG	3840
CGATTTGACT ATGAACGTAC AGGATCTGCA GGAAGTTGTT CACTATGAGC GGAAGGATTT	3900
GATGCCAGAA GGTGAGCGTC GGGTTGAGTT TCATGCTCAT ACTAACATGT CGACTATGGA	3960
TGCTTTGCCA GAGGTGGAAG AGATTGTTGC AACAGCTGCT AAGTGGGGAC ACAAGGCGGT	4020
TGCTATCACG GACCATGGGA ATGTCCAGTC CTTTCCACAT GGCTATAAGG CGGCTAAGAA	4080
AGCGGAATC CAGCTGATCT ATGGGATGGA AGCCAATATC GTGGAGGACC GTGTCCCTAT	4140
CGTCTATAAC GAAGTGGAGA TGGACTTGTC AGAAGCAACC TACGTGGTCT TTGACGTGGA	4200
AACGACGGGA CTTTCAGCTA TCTATAATGA CTTGATTGAG GTTGCGGCTT CTAAGATGTA	4260
CAAGGGGAAT GTTATTGCTG AATTGTGATG ATTTATCAAT CCTGGGCATC CCTTGTGAGC	4320
CTTTACTACA GAGTTAACTG GAATTACAGA TGATCATGTC AAAAATGCCA AACCCTAGTA	4380
ACAAGTTTTG CAAGAATTCC AAGAATTTTG CAAGGATACG GTCCTAGTTG CCCACAATGC	4440
TACCTTTGAC GTTGGCTTTA TGAATGCTAA TTATGAGCGG CATGATCTTC CAAAGATTAG	4500
TCAGCCAGTT ATTGATACGC TGGAGTTTGC TAGAAACCTC TATCCTGAGT ATAAACGCCA	4560
TGGTTTGGGG CCTTTGACCA AGCGTTTTGG TGTGGCCTTG GAACATCACC ACATGGCCAA	4620
CTACGATGCG GAAGCGACTG GTCGTCTGCT TTTCATCTTT ATCAAAGAGG TAGCAGAAAA	4680
ACATGGTGTG ACCGATTTAG CTAGACTCAA CATTGATCTA ATCAGTCCAG ATTCTTACAA	4740
AAAAGCTCG ATCAAGCATG CGACCATCTA TGTCAAGAAT CAGGTAGGTC TAAAAATAT	4800
CTTTAAGCTG GTTTCCTTGT CTAATACCAA GTATTTTGAA GGAGTGCCAC GGATCCGAG	4860
AACGGTTCTA GATGCCCATC GAGAGGGCTT GATTTTAGGT TCAGCCTGTT CAGAGGGTGA	4920

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AGTTTTTGAC GTGGTCGTTT CTCAAGGTGT GGATGCGGCG GTTGAGGTGG CCAAGTATTA	4980
TGATTTTATC GAGGTCATGC CACCGGCTAT CTATGCACCC TTGATTGCCA AAGAGCAGGT	5040
CAAGGATATG GAGGAACTCC AGACCATTAT CAAGAGTTTG ATAGAGGTTG GAGACCGCCT	5100
TGGCAAGCCT GTTCTGGCTA CGGGAAATGT TCACTATATC GAACCGGAAG AAGAGATTTA	5160
TCGTGAAATT ATCGTCCGTA GTTTGGGACA GGGTGCGATG ATTAATCGAA CTATCGGTCA	5220
TGGTGAAAT GCCCAACCAG CACCACTTCC AAAGGCTCAT TTTCGAACGA CTAATGAGAT	5280
GTTGGATGAA TTTGCCTTTT TGGGAGAGGA ACTGGCTCGT AAAGTGGTTA TTGAAAACAC	5340
CAATGCCTTG GCAGAAATAT TTGAATCCGT TGAAGTCGTT AAGGGTGAAT TGTATACGCC	5400
TTTCATCGAC AAGGCTGAAG AAACAGTTGC TGAGTTGACC TATAAGAAAG CTTTTGAGAT	5460
TTATGGAAAT CCGCTGCCAG ATATGTGTTGA TTTGCGGATT GAAAAAGAAT TAACATCCAT	5520
ACTGGGGAAT GGATTTGCTG TGATTTATCT GGCATCGCAG ATGCTGGTGC AACGTTCTAA	5580
TGAACGGGGT TATTTGGTTG GTTCTCGTGG GTCTGTGCGA TCTAGTTTCG TTGCGACCAT	5640
GATTGGGATT ACGGAGGTCA ATCCTCTCTC TCCTCACTAT GTCTGTGGTC AGTGTCAGTA	5700
CAGTGAGTTT ATCACAGATG GTTCGTACGG TTCAGGATTT GATATGCCCC ATAAGGACTG	5760
TCCAAACTGT GGTCACAAAC TCAGTAAAAA CGGACAGGAT ATTCGGTTTG AGACCTTCCT	5820
TGGTTTTGAT GGGGATAAGG TTCCTGATAT TGACTTGAAC TTCTCGGGAG AAGATCAGCC	5880
TAGCGCCAC TTGGATGTGC GTGATATCTT TGGTGAAGAA TATGCCTTCC GTGCGGGAAC	5940
GGTTGGTACG GTAGCTGCCA AGACTGCCTA TGGATTTGTC AAAGGTTACG AGCGAGATTA	6000
TGGCAAGTTT TATCGTGATG CAGAAGTAGA ACGCCTCGCT CAAGGAGCGG CGGGTGTCAA	6060
GCGGACAACA GGCCAACACC CGGGGGGAAT CGTTGTTATT CCGAACTACA TGGATGTCTA	6120
CGATTTTACG CCTGTCCAGT ATCCAGCAGA TGATGTCACG GCTGAATGGC AGACCACTCA	6180
CTTTAACTTC CACGATATCG ATGAGAACGT CCTCAAATC GATGTACTGG GACATGATGA	6240
TCCGACTATG ATTCGAAAAC TTCAGGATTT GTCTGGTATT GACCCTAATA AAATTCCTAT	6300
GGATGACGAA GGCGTGATGG CACTCTTTTC TGGGACTGAT GTGCTAGGGG TAACACCTGA	6360
ACAAATTGGA ACGCCTACGG GTATGTTGGG GATTCCAGAG TTTGGAACAA ATTTCTGACG	6420
TGGAATGGTA GACGAAACCC ATCCGACAAC CTTTGCGGAA TTGCTTCAGC TGTCTGGTCT	6480
GTCCACCGGT ACTGATGTTT GGTGCGGAA TGCTCAGGAT CTGATTAAGC AAGGAATAGC	6540
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TCTGGAACCT AAGATGGCCT TTACCATTAT GGAACGGGTA CGTAAGGGTT TGTGGCTAAA	6660
GATTTAGAA GAGGAGAGAA ATGGCTATAT CGAAGCAATG AAGGCTAATA AGGTGCCAGA	6720

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GTGGTATATC GAATCCTGTG GGAAAATTAA GTACATGTTC CCTAAGGCCC ATGCGGCAGC	6780
CTACGTTATG ATGGCCTTGC GTGTAGCTTA CTTCAAGGTT CACCATCCTA TTTATTACTA	6840
CTGTGCTTAC TTCTCCATTC GTGCTAAGGC TTTTGATATC AAGACCATGG GTGCGGGCTT	6900
GGAGGTCATC AAGCGCAGAA TGGGAAGAAAT CTCTGAAAAA CGGAAGAACA ATGAAGCCTC	6960
TAATGTGGAA ATCGATCTCT ATACAACTCT TGAGATTGTC AATGAGATGT GGAACGAGG	7020
TTTCAAGTTT GGTAAATTAG ATCTCTACTG TAGTCAGGCG ACAGAGTTCC TCATCGACGG	7080
GGATACCCTT ATCCCACCAT TTGTAGCAAT GGATGGTCTG GGAGAGAACG TTGCCAAGCA	7140
ACTGGTGCGG GCGCGTGAAG AGGGAGAATT CCTCTCTAAA ACAGAACTAC GCAAGCGTGG	7200
TGGACTCTCA TCAACCTTGG TTGAAAAGAT GGATGAGATG GGTATTCTTG GAAATATGCC	7260
AGAGGATAAC CAGTTGAGTT TGTTTGATGA GTTGTTTTAA AAAATTGCTT AATAATCTAT	7320
TAAAAGAGGC TAACGTATAT CCAATAGATT TACATTAGCT TTCTTTTGTG TTAAAATAGT	7380
CTATGGAAAG AGGGTGAGAG TATGTCAAAG ATGAGTATAA GCATCCGTCT GGATAGTGAG	7440
GTTAAGGAGC AGGCCCAACA GGTGTTTAGT AATCTGGGAA TGGATATGAC AACAGCTATT	7500
AATATTTTCC TTCGTCAAGC AATTCAATAT CAGGGATTAC CTTTGTGATG TAGACTAGAC	7560
GAAAAATCGA AGTTGCTCCA AGCGTTAACG GATTTAGACC AAAATCGTAA TATGAGCCAG	7620
TCTTTTGAAT CAGTCTCAGA TTTGATGGAG GACTTACGTG CTTAAGATTC GTTATCATAA	7680
ACAGTTTAAA AAAGATTTTA AGTTGGCTAT GAAGCGTGGT TTGAAGGCAG AATTATTAGA	7740
AGAAGTTTGT AATTTTCTGG TTCAAGAAAA AGAACATCCT GCCAGAAATC GTGATCATTC	7800
ATTGACGGCA TCCAAGCATT TTCAAGGAGT TCGTGAATGC CATACCCAGC CAGATTGGCT	7860
TTTGGTTTAT AAAGTAGACA AGTCGGAATT GATTTTAAAT TTGCTGAGGA CAGGCAGTCA	7920
CAGTGATTTA TTTTAATCTA TTTTAAGGGG GTTCTCATGA AACTAAGAAT ATTTGCGGAA	7980
GATAAGCCGG CTAAGAAGGT ATTTGAATAT CAATTAGAAC TTGCTGATCG TACAATTCTT	8040
CTATCGACAG CACTCTTGTC AGGTGCTATT GCTTTAGCAG GAATCTTTTC TGCTTTGAAA	8100
GAAAAATAAA AATAGAAAAG AGAAAACAGA ATGGTTTAC CAAATTTTAA AGAAAATCTA	8160
GAAAAATATG CGAAATTGTT GGTGCGAAC GGAATTAACG TGCAACCTGG TCACACTTGT	8220
GCTCTCTCTA TTGATGTGGA GCAACGTGAA TTGGCACATC TAATCGTGAA AGAAGCTTAT	8280
GCCTTGGGTG CGCATGAGGT CATCGTTCAG TGGACAGATG ATGTGATTAA CCGTGAGAAA	8340
TTCTCCATG CCCCATGGA GCGTTTGAC AATGTGCCAG AATACAAGAT TGCTGAGATG	8400
AACTATCTCT TGGAGAATAA GGCTAGCCGT CTTGGAGTTC GTTCATCTGA TCCAGGTGCC	8460

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TTGAACGGAG TGGACGCTGA CAAGCTTTCA GCTTCTGCTA AAGCTATGGG ACTTGCCATG	8520
AAGCCTATGC GTATCGCAAC TCAATCTAAC AAGGTTAGCT GGACTGTAGC AGCTGCAGCA	8580
GGACTTGAGT GGGCTAAGAA AGTCTTCCCA AATGCTGCGA GCGACGAAGA AGCAGTTGAT	8640
TTCCTTTGGG ACCAAATTTT CAAAACCTGC CGTGTCTACG AAGCAGATCC TGTTAAGGCT	8700
TGGGAGGAAC ATGCAGCCAT TCTCAAGAGC AAGGCCGATA TGCTTAATAA GGAGCAATTT	8760
TCAGCCCTTC ACTACACAGC GCCAGGAACA GATTTAACAC TTGGTTTGCC AAAGAACCAC	8820
GTTTGGGAAT CAGCTGGTGC TGTCAATGCA CAGGGCGAAG AATTCTTGCC AAATATGCCA	8880
ACAGAAGAGG TCTTCACAGC GCCTGACTTC CGTCGTGCAG ATGGTTATGT CACTTCTACA	8940
AAACCGCTTA GCTACAACGG AAATATCATT GAAGGCATTA AGGTGACCTT TAAGGATGGA	9000
CAAATCGTAG ATATCACTGC TGAGAAGGGT GATCAGGTTA TGAAAGACCT TGTCTTTGAA	9060
AATCGGGTG CGCGTGCCTT GGGTGAATGT GCCTTGGTAC CAGATCCAAG TCCAATTTCT	9120
CAGTCAGGCA TTACCTTCTT TAACACCCTT TTCGATGAAA ATGCGTCAAA CCACTTGGCT	9180
ATCGGTGCAG CCTATGCGAC TAGCGTTGTT GATGGAGCGG AGATGAGCGA AGAGGAGCTT	9240
GAAGCTGCAG GGCTTAACCG TTCAGATGTT CACGTAGACT TTATGATTGG TTCTAACCAA	9300
ATGGATATCG ATGGTATTCG TGAGGATGGA ACGCGGGTAC CTCTTTTCCG TAATGGGAAT	9360
TGGGCAAATT AAGGAGATAA TATGTTAGGA AGTATGTTTCG TTGGTCTCCT AGTGGGATTT	9420
TTAGCAGGTG CTATGACCAA TCGTGGAGAG CGAATGGGAT GTTTTGGAAA AATGTTTCTC	9480
GGTTGGATCG GAGCCTTTCT AGGTCACTTG CTCTTTGAAA CTTGGGGGCC AGTTTATCA	9540
GGAACAGCTA TTATCCCAGC GATTTTAGGA GCCATGATTG TTTTAGCTAT TTTTGGAGA	9600
CGAGGAA	9607

(2) INFORMATION FOR SEQ ID NO: 81:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 14231 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 81:

CTACAAGATA ATTCCAGCTA TAACATCCGC TATAATAGTA AGAGCGAGCT CTATGATAAG	60
GCTCATTAGT TTCACCTCCT CTCACGAACC CATAGGAACG TAATCGGTAA CCGATGACAA	120
AAATAGTATA CCACAATACA TTTAGATCAT CAAGGTCAC TAATTCTTGA AATATCAGAT	180
CTAAGAGAAA AATCTTTAAA ATCAGAAAAA CGCATAATAT CAGGTGTGCA AAAACTTGAT	240

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ACTATGCGTT TTATTGTGGG AAGGTTTACT CCATTTTCTC CTGAAATTGA GTTTTGTCC	300
AGCCTCTGTT TTTAGGGTTG CTAAGAAAAT AATGTCATGT GGTGAATATT TGTAAATCAG	360
TCAGCAGACA GAACGATACT CTTCGAAAAT CTCTTCACAT CATGTCAGCT TCGTCTTTCC	420
GTATATATGT GACTGACTTC ATCAGTTCTA TCTACAACCT CAAAACAGTG TTTGAGCTG	480
ACTTGATCAA TTTTCAAATC TGTACTTTGA GCAAGCTGAG ACTAGCTTCC TATTTGATTT	540
TCATTGAATA TCAGAAACCC ATTCTCCATC AAATAATTCTG ACTGCGTCTA ATAATTTTGT	600
ATCTGGCACG GTGTCTGAAA TAAAGGTTGT GTATTTGGAG AGGGGATTAA TTTTAAAAAA	660
TCCAGTCTTG TAAAATTTAG AACTATCAAT CAGTAAGATG GTTTCATGGG CTTTGTCAAT	720
AATATTCTTT TTTGAAATAG CTTGGCTGAG AGAAGCTTCA TAAACATATT GGTCAATCAAT	780
ACCTCTTGCT GAACAAAATG CTAAATCGAT ATTAATAATGA TCTAATAAAG AATTTTCCTT	840
ATCATAGTTG ACCACGGAAC AGGATTGATG TTTGACCTCG CCAGATGTGA TAAAGATTTT	900
GGAGCTATCT TTAACAGTTT CAGATAGGGT TTGTGCAGTA TGTAAACCAT TTGTAATAAT	960
AATCAAATTA TCAAGTTCAG AAAGATAGGG ACAGAGTTCG TAGACAGTAG TACTAGAATC	1020
TAGATAGATA CACATACCAG ACCGAATAAA GTCTTTAGCG AGACTAGCGA TTAGTCTTTT	1080
TTGCCTAGTA CTTTCTCCTT CACGTATTTG ATGAGAAAGT TCAATTGTGT TCATAGAGGA	1140
CAGGGTCACG TATCCGTGCT TTCTTTTGAT AAGACCTTGA TTTTCTAAGA AAATTAAATC	1200
ACGACGTAAG GTACTTGTGC TGGAGAAAGT GATTCTGCC AGCTCTTTTA CGGCAATTCT	1260
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CTCCTAATTT ATCATTTCAG CTATATTATA GCACAAATG GAGGAATTG AATTATTTT	1380
ATGAATATTG GGTTAACATT TGAACATTAT TCAAGTAAGC GTTCACATAT TGAAAAAATA	1440
AAACGTGGGG ATTATAATAA AGTTAATCma GGACGAAGAG AGAAGAAAAA TGGAAGCGGT	1500
TTTAGCAATA GATTTAGGTG CGACTTCTGG AAGAGCAATC GTTGGTTACC TTTCTGAAAA	1560
TAAACTAGTA ATGGAAGAAA TAAATCGCTT TTCTAATCTA CCTATTAGAG TAAAAGGGCA	1620
TTTATCTTGG GATATTGACT TTCTACTAGC TAAAATTCTT GAAAGTATCC GCTTGGCTAA	1680
TACTAGTTAC AAGATTTTAT CTATCGGTAT TGACACATGG GGAGTTGATT TTGGACTGAT	1740
TGATAATGAA GGTAAGCTGT TATTACAACC TGTTCATTAT CGTGATGAAA GAACAAAGGG	1800
AGTGTAAAG GAAATATCTG AAATGACTGA ATTAGAAAAA CTGTATTTCAG AGACAGGAAA	1860
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CTCTTTCTAT AAGACCAATA AGATTCTTTT AATGCCAGAT TTGTTTAATT ATCTCTTGAC	1980

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AGGTAAGTTT GCTACAGAAA AAAGCATTGC TTCAACAAC CAATTATTTG ATCCTAGGAG	2040
TCAAAATTGG AATCAGAATA TCTTAAACT ATTTGAATTG GATTCATCTT TACTTCCTGA	2100
AATTGTTTCA GAGGGAAATG TTCTTGAAG GATAAAGAG GAGTATGGTT TAGGCGATAT	2160
TCCTGTTGTG AATGTTTGTA GTCATGATAC AGCAAGCGCG ATTGTCTCAG TACCTAAGAC	2220
AGAAGGTAGT TTATTTATTT CATCAGGTAC TTGGTCTTTG GTTGAGTGG AACTTACTTC	2280
ACCGATTCTT ACTACCGAAT CCTTCAGTTA TGGATTTACA AATGAAGTCG GTAAAGATGG	2340
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GCACAAGACT TTGACAGAAT ATCTAGCTTA TCATCATGAA ACTAGAGAGT GGACAGATGG	2580
ACAACATTTT AAGATTGTTT ATGAAAGCCT AGCTGAAACG TATAGGAAAG CGATAGAGTT	2640
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TGTGCAGGAA GGGGGGATAA TTGGTGAATT GAAAAATATT TAGTGTTTGT ATATGAGGAG	3000
GACAAGGATG TCAGATGTAA AACAAGAATT AATTAAATAT GGTAAGAAGC TAGTAGAAAC	3060
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GGCAGGAAA GATGTTCCGG TAGCTGAGTA TGCAACATAT GGCACGAAAG AATTGGCTGT	3420
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AAAAATTTAT TGTTTAGCTA AGAATTTTGG AGAGCCAGTA GTTCTTCCTG ATGAGGAGAT	3600
GGAATTGATG GCAGAAAAAT TTAAACATA CGGTCAGAGA AAATAGGGAG GATATTAATG	3660
TTAAACATA TACCGAAAAA TATTTCTCCA GATTTATTGA AGACTTTAAT GGAAATGGGA	3720
CATGGAGATG AAATAGTATT AGCTGACGCG AATTATCCTT CTGCCTCATG TGCAAAATAAG	3780

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CTAATTCGTT GTGATGGTGT AAATATTCCA GAATTATTAG ATTCCATTCT GTATTTAATG	3840
CCATTAGATA GTTACGTCGA TAGTTCAATT CAGTTTATGA ACGTTGTTTC GGGTGATGAT	3900
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ACGATTACTT ATCTTAGAAG AGAAGACTTT TATGAACGTA GTAAGAAAGC TTATGCTATT	4020
GTTGCTACAG GAGAAACTTC ACTTTATGCT AATATTATCC TTAAGAAAGG AGTAGTTGTT	4080
GAAAGAGAAA ATGTTCAATA GAGGAATTTT ACTTGCCAGT CATGGTAATT TTGCTAGCGG	4140
AGCTCTCATG ACCGCAGAAA TGTTTGTTGG TGAGACAACA AATGATAGAG TTAGGACATT	4200
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CCAATTTTCC TAGCTATTAT GCTTGAGGG GAATATGTGG CAGACTTGT TGCTAAGGTT	5520

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ACACCAGATA AATTTAATGA TGGTAATTG AATATAGCAT ATGCAAAACC AACAACACAA	10800
AGTTCTGTAG ATTACAATGG AGACCCTAAT AGAGCTGTGG ATGGTAACAG AAATGGTAAT	10860

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CTTCCAAGAA TACTTAGGAA TGCGAAATGA ATCGGTAGAT ATGACGGAGT TCACGCGCCG	12780
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AGATAGACAA TGGGAATTTG TTATTAAGAT GTTCATGATT GGACGTGACT TAATGGTTGG	12960
TAACCCAAGA CTGTGTAAC TTGGTTTTGA GGAAGAAGCG GTTGGTCACC ATGCTTTAGT	13020
AGCTGGTTTC CAAGGTCAAC GTCAGTGGAC AGACCATTTT CCAAATGGGG ACTTTATGGA	13080
AACTTTCCTC AATACTCAGT TTGACTGGAA TGTATTCTGA AAACCATTG TATTTGCGAC	13140
AGAGAATGAT TCACTAAATG GTGTGTCTAT GCTCTTTAAT TATCTATTAA CAAATACTCC	13200
ACAAATCTTT GCTGATGTGC GTACTTATG GAGCCCAGAG GCTGTTAAAC GTGTAACGGG	13260
ACATACTTTA GAGGTCGTG CTGCAGCTGG CTCTTACAT CTAATCAACT CTGGTTCTTG	13320
TACATTGGAT GGTACAGGTC AAGCTACTCG AGATGGCAAA CCTATTATGA AACCATTCTG	13380
GGAGTTGGAA GAAAGTGAAG TGCAGGCTAT GCTTGAAAAT ACAGACTTCC CACCAGCAAA	13440
CCGCGAATAC TTCCGTGGAG GAGGATTCTC AACTCGTTTC TTGACGAAGG GGGATATGCC	13500
AGTAACAATG GTACGTCTCA ATCTTCTAAA AGGGGTGGT CCAGTGCTAC AAATTGCAGA	13560
AGGTTACACA CTTGAACTTC CTGAAGATGT TCACCATACT TTAGATAATC GTACAGATCC	13620
AGGATGGCCA ACTACTTGGT TTGCTCCACG TTTGACAGGA AAAGGTGCTT TCAAGTCTGT	13680
CTATGACGTC ATGAATAATT GGGGAGCTAA TCACGGAGCC ATAACATATG GACACATTGG	13740
AGCAGACTTG ATTACCTTGG CTCTATGTT GAGAATTCCT GTCAATATGC ATAATGTACC	13800
TGAGGAAGAT ATCTTTAGAC CTAAAAATTG GTCCTTATTT GGAACAGAAG ATCTAGAATC	13860
AGCAGACTAT CGTGCATGTC AGTTGTTGGG GCCACTACAT AAATAAACT GTTTATATA	13920
GGAGGTGAAC TTACGTCCTT CCTATCCTTT TAAAAAGATT TGTAAACAA TTCACAAAT	13980
ATTGAAAACG AATACAAAA GTAATATAAT GATGTTAAAT AGATAGCGCG GAGGCGCAGG	14040
AGGAAAATTA TATGGCTATA TTTTATGTTT CGGCAGTCAA CCTTATTGGA AAAGGTGTTG	14100
TAAATGAAGT GGGTCCTTAT ATCAAGGAAC TTGGCTATAA AAAGGCACTT TTGGTGACAG	14160
ATAAGTACAT CGAAGGCAGT GATATTTTAC CTAAGACTTT AAAACCACTG GATACAGAAG	14220
GAATCGAATA T	14231

(2) INFORMATION FOR SEQ ID NO: 82:

(i) SEQUENCE CHARACTERISTICS:

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(A) LENGTH: 16995 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 82:

AGTTCTCTTA ACTTTTTTAG GATGGCATT CCGCTCTCA GGTACTCATT TTCTGCTgAA	60
GACGTTCTAA TTCTGTCCTC TCTTCAGGTC TCGTTTTTGG CTTACGTCCC ATTTTAGGTA	120
CTCTCCCTCT TGTTTTCTCA ACAATAGTAT ACCCGTTTTT CCTGTATTGT GCTAGCCAGT	180
TAAGAAGTAT CGTACGACTT GGGAGACCGT ATTCAAGAGA AACTCTATCT TTAGTCCAGC	240
CTTCATGTCA GACTTTATTA CTCATTTCTT GTTTTAAATC AGGAGAATAG TAACGATTTT	300
TTCTTTTTTT GACGAACCTT ATTCCGTAAC GATCAATCAA TTTAATCATG TACCTAATAT	360
TAGAATTGCT TATCCCAAAT TTATTTGAAA GCTTCTCTAA GCTATATCCT TGTTTTCTAA	420
GTTTCATAGAT CTGAACCTTA TCATCATAAG TTAGTTTCAT AATAAAAACA CCCCCAAAGT	480
TAGATTTTTT CTGTCTAACT TTTGGGGTGT AGTTCATGTA CACCTGATAT GATGCGTTTT	540
ATAATTTTTA AGCCTTTTTG CCCAGCCTCG TCAAAAGTAA TGTTTGTACA CAAAATCTGT	600
GACAAACTT TAGTTTTAAA GGTTTTTAAC TTTGTATATA CTAGTTTTAA GAAAAGGAGG	660
ATGATCTAAT GGAAGAAAAA GTATCATTGA AAGTCAGGGT TCAAAAAC TA GGGACATCGC	720
TTTCAAATAT GGTATGCCC AATATTGGAG CATTATTGCG TTGGGGAGTA TTGACTGCCC	780
TCTTTATCGC TGATGGCTAT CTGCCAAATG AACAGTAGC TACTGTTGTT GGTCTATGT	840
TAACGTATTT ATTGCCAATC CTGATTGGTT ACACAGGTGG ATATATGATC CATGGCCAAC	900
GTGGTGCCGT TGTAGGAGCT ATTGCTACTG TTGGTGCAAT CACAGGTTCT AGTGTTCTTA	960
TGTTTATCGG AGCTATGGTA ATGGGCCCCAC TGGGAGGATG GACTATCAAG AAATTTGATG	1020
AGAAGTTCCA GGAAAAAATT CGTCCCGGAT TTGAAATGTT AGTTAATAAC TTCTCAGCTG	1080
GTCTCGTTGG TTTTGCAATTA TTGCTTTTGG CTTTCTACGC AATCGGTCCA GTCGTATCGA	1140
CTCTTACTGG AGCTGTTGGG AATGGTGTG AGGCTATTGT CAATGCTCGC CTCCTTCCTA	1200
TGGCTAATAT TATCATCGAA CCGGCTAAAG TCCTTTTCCT CAATAATGCC CTCAATCATG	1260
GCATTTTAC TCCTCTGGGA GTAGAACAGG TAGCTCAAGC TGGTAAGTCA ATTCTCTTCC	1320
TATTGGAAGC TAATCCTGGA CCAGGTCTGG GAATTCTATT AGCTTATGCT GTATTGCGTA	1380
AAGTTCTGC TAAATCTTCT TCTTGGGGG CAATGGTTAT TCATTTCTTC GGAGGGATTC	1440
ATGAAATTTA CTTTCCTTAT GTTATGATGA AGCCTACTCT ATTTTtagCT GCTATGGCAG	1500

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GAGGTATCTC TGGAAC TTTT ACTTTTCAAC TCTTAGACGC TGGTCTTAAA TCTCCAGCTT	1560
CACCAGGTTT TATTATTGCG ATTATAGCTA CGGCGCCAAA AGGTGTTTGG CCCCATCTAA	1620
ATGTCTTTTT AGGTGTTTTA GTGGCAGCAG TTGTTTCTTT CCTTGTAGCA GCCCTTATTC	1680
TTCATGCAGA CAAGTCAACT GAGGATTTCG TCGAAGCTGC TCAGGCGGCT ACCCAAGCAG	1740
CTAAGGCTCA GTCTAAAGGT CAGTTAGTAT CAACTTCTGT TGATGCAGTT GTTTCGACAG	1800
ACTCAGTGGG AAAAATCATT TTCGCCTGCG ATGCTGGTAT GGGAAGCTCT GCTATGGGAG	1860
CTAGTATTCT TCGAGATAAG GTTAAAAAAG CAGGTCTAGA GATTCCAGTA TCTAATCAGG	1920
CAATCTCAAA TTTGCTTGAT ACACCAAAAA CATTAAATGT TACTCAGGAA GAACTGACAC	1980
CAAGAGCTAA AGACAAGAGT CCAAGTGCTA TTCATGTTTC TGTTGATAAT TTCTTAGCGT	2040
CCTCTCGTTA TGATGAAATT GTAGCTTCAT TAACAGGAGC TTCTCCAATA GCAGAAATTG	2100
AAGGAGATAT ACCAACTTCA GCACCAGTAG ATAGTCAGGA AAGTGACCTT AACCATATTG	2160
ATGCTGTAGT AGTTGCTTAT GGTAAAGCAC AGGGAAGTGC AACTATGGGC TGTGAAACGA	2220
TTCGGGCTAT TTTTAGAAAC AAGAATATTC GTATTCCAGT TTCTACTGCC AAAATTTTACG	2280
AATTAGGTGA ATTTAATTCT AAAAACATAA TGATTGTAAC AACTATTTCT TTACAGGCAG	2340
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AATGCTATTA ACCAAACGAG AAGAACAATT ATTGAAGGCT TTCCTACATG TAGGGAAGCT	2520
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CTATATTTTG ACTGGAGAGT TGGATGATTT GCCGACAGAA CTTGAAGTGT TAGTTGAGTA	2700
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TATCTCAGTA GCAGATTTTT CAACCGGTAA TTTTGGGAGC TTTGATATTT TAGAAGCAGA	3000
TAGAACTGGG CTGGCCAGTC AGATTGTTAA TAAGCAACTG TCAGGTTTTT CAGATATGGA	3060
TGCTAGGATG AAGATGTTTT TTGCGATCTT GTTATCTCTT ATAGGTCAGG AGCAAAACAT	3120
TGAAAATTCA CCTAATACTA GTAAGCAGGC TTTGGAAATT TCTCAAAAAA TTTTTCAGC	3180
TTACTCTAAG CAGACTGCAC AATTTTATAG TATTCAGGAA ATTATCTATT TTGCGAGCAT	3240
CTTGGATGAA TTAATCATTA AACGTCAGGA CAATCCGCTC TTTACGGAGA AATTTGATGG	3300

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CTTTTTTAAG GACAAGGTTT TATTCAATTT TCTTTTCCAT CATATTCGGC TCAGTTTAGG	3420
CGTCCCTATC CTTTTTCAGG GTGAAAATTT GCCAGAATCT ATCCAGATTT TAGTTGAAAG	3480
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TCATACAGAG TATGAGTATG GCATGATTGC CCTACATTTT ATCTCTAGCT TAGGCCGTAG	3600
TCCAGAGATT TATCCAGTCC GTGTTTGTCT TTTAACGGAT GAACGTCGGG TCACTAGAGA	3660
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TCTAGTAGAT TACCACAGTA TTGATCTCAG TCAGTATGAT TATATTTTAT CTACCAAGCC	3780
GCTGACTAAT CAGGAAATCG ATGTAATTTT TAGTTTCCA ACCGTCAAAG AATTGCTTGA	3840
ATTACAGGAA CGACTTCAGT ATGTACAGGC ACATCGTACA ATTGTCGCGC GTGATGCTAT	3900
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CATCCAATAT CAGAAGAATG TGAGTGACAG AGCTTACCTA ACAAGAAAAT TGTATCTCA	4080
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TATTTTTTAAC GAAAAAATTA AGAAATTGGA GAACTAATAT GAACTTGAA AAACATTTGA	4440
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ACTTAGAAAT TATTCAGAAA ATTTCTATCT TCTGTGCAGA TGTAGATAAT GTTCTTAAAC	4800
TAGCAGATGC TCAGTCAAAA GAGGAAGTAT TGCCTTATTT TGATGCTGTT GAATAATTGA	4860
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AAGACGGATA TTATTACTAC TGCAATCGGA CCTAATATAC TCCCTTTTAT CGCCGAACTT	5220
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GCCTGTGAAA ATATGATTGG CGGGTCTCAA TTTCTTTATC AAGAAGTCAA GAAATATTTA	5340
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CCTCAATTAC ATCAGCCATG GTTCCTGTGA CAATGATTTT AAAATCATCA AAATCCTCTG	10440
CGTCCGTATC GTCGATTCTT AGGAGGAGGA TCGGATAAAA ATTGCTGGGA TTTTCAAAAA	10500
TAATCCGTTC AATAGTTCCT GAAAAATAAA CTTCATAAAA ATTCCTTTGC ATGAATAGGT	10560
GAGAGTTGGG ATTGTTTTTA TTTTATACTC TTCGAAAAATA TCTTCAAACC ACGTCAGCTT	10620
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CTCATCTGTC CCAATTAAAG GAAGATTTTG TCCGCTGGTT TGCTCTACAG CTTGATAGCC	12120

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AGCCAGACTG GTTGATAGT GTTCAAGAAA AGCCTGAATA TCCTTTTCGC TTGGTGTGAG	12300
TGTGATACTT GCCATAGTTT CTATTGTACC ACAAAGCAG TAAAATTTGT AAAAAGCTGAC	12360
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TCAAATTTAC ATTCGGGAAA AAATCGTTAA CCTTGACAAG CGAACATGAC AACCTTTTTA	12480
TGGAGGAAAT CGCTAAGGTT GCGACAGAAA AATACCAAGC AATTAAAGAA CAAATGCCTA	12540
GCGCAGATGA TGAAACAATC GCTCTTTTGT TGGCAGTCAA CTGTTTATCA ACTCAGCTCA	12600
GCCGTGAGAT TGAATTTGAC GATAAGGAGC AAGAGCTAGA AGAACTCCGT CACAAGCTTG	12660
TGACTTGTA GCAAGAACAG AGCAAGATTG AGGATTCCTT ATGATTTTCA TCCTTCTTCT	12720
ATTGGTCTTG GTTTGGGAT TTTATATCGG CTATCGGAGA GGCCTGCTCT TACAGGTTTA	12780
TTACCTGATT TCAGCCATGG CATCGGCTTT TATGGCTGGC CAGTTTATA AGGGGCTTGG	12840
AGAGCAATTC CATTTATGTC TCCCTTATGC AAATTCGCAG GAAGGTCAGG GGACTTCTT	12900
TTTCCCATCG GATCAACTCT TTCAGCTGGA TAAGGTCTTT TATGCAGGTA TCGGCTACTT	12960
GCTTGTATTT GGGATTGTCT ATAGCATTTG TCGTTTACTT GGTCTTCTCT TAACTTTGAT	13020
TCCTAGCAAA AAAGTGGGTG GTAAGTTGTT CCAAGTTTCA GCAGGTATCT TGTCCATGTT	13080
GGTGACCTTA TTTGTCTGTC AAATGGCCTT GACAATCTTG GCGACCATCC CCATGGCAGT	13140
TATACAAAAT CCTCTTGAAA AGAGTATCGT CGCAAAACAC ATCATCCAGA GCATACCGGT	13200
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AGTTGCATAA GGTCAAGGCC TTGTTTGAGC CTCATTTGTT GACCGAGCAG GGCTTGAGC	13440
AATTGAGACA ACTGGCTCCG ACTGCCAAAG CAGATAAAAT CAAACAGGCT TTTGCTGAGA	13500
TGAAGGAAAT GCAGGCTCTT TTCGTCGAGC AACCGCATTT TACTATTCTC TCAACTAAGG	13560
AAATTGCAGG AGTCTGCAAG AGGTTGGAGA TGGGAGCGGA TCTCAATATC GAGGAGTTCC	13620
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AAAATGTCAG CTTGGAAGAA TTAGCCCTTT GGTTTGAGAA ATTACATGAT TTTCCGCAAT	13740
TACAAGGAAA TCTTCAGGCC TTTAATGATG CGGGTTTCAT TGAAAATTTT GCCAGTGAAG	13800
AATTGGCGCG AATCCGTCGA AAAATACATG ATAGCGAGAG TCAGGTACGC GATGTTTAC	13860
AAGACTTGCT CAAGCAAAA GCGCAGCTGT TGACGGAAGG AATTGTTGCT AGCAGAAATG	13920

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GCCGTCAGGT TTTACCAGTC AAAAACACCT ACCGCAATAA GATTGCAGGT GTCGTTTCATG	13980
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AGTTTGATCT TGTCAAGCC CAGCAAGAAA AACCAGTCAA GAAGAAACAG GTCAATGTTG	15420
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AAGTTGATAT CATCCATGGT ATCGGAACAG GAGTCATCCG TGAAGGAGTT ACCAAATACT	15600
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AACTGCTCAA ACTCTCAGGT AAAAGGACAG AGCTAGGATA GACCGCTTTT TAGCATTAT	15960
CTAAGCATTC CAGAGTACAT GTATCTTGCA TGTGCTCTTT CTTTGGGGT TGAAACGATA	16020
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GATTTTCGCCA GCCATCACAG CTCTCGTCTT GTCTGTCTTT GTAGCGATTG CAGTCTTTGG	16620
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TTTAGTCTTT ACCTCAGCTT TTAGTCCCCT TGCTGCGGTA GGTGGATTG CTGGTGCTAG	16800
CGTTCGGATG GCTATTCAAA ATGGTGTGGC GCGTGGTGTG TTCTCAAACG AATCTGGTCT	16860
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GATTTCCATG ACAGGAACCT TTATTGATAC CCTCATCATT TGTACTCTAA CTGGTTTGAC	16980
CATCTTGGTA ACTGG	16995

(2) INFORMATION FOR SEQ ID NO: 83:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 28473 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 83:

CCGGGGCTTT TGTAGTATAA TAGAGATACG TTTTGAAAGT AGGAGGTATC TATGGACTTA 60

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ACTAAGCGCT TTAATAAACA GTTAGATAAA ATTCAAGTTT CGTTGATTTCG TCAGTTTGAC	120
CAGGCTATTT CGGAGATTCC TGGGGTCTTG CGTTTGACCT TGGGGGAACC TGATTTTACA	180
ACGCCAGACC ATGTCAAGGA GCGGGCAAG CGAGCGATTG ATCAGAACCA ATCCTACTAT	240
ACAGGGATGA GTGGTCTGCT GACTCTACGT CAGGCAGCCA GTGACTTTGT TAAGGAAAAG	300
TACCAACTGG ACTATGCTCC TGAAAATGAA ATCTTGTTA CAATTGGGGC GACAGAGGCT	360
TTATCTGCGA CTTTGACGGC TATTTTGAA GAGGGAGACA AGGTACTTTT GCCAGCTCCT	420
GCTTATCCAG GCTATGAACC GATTGTAAAC TTAGTTGGGG CAGAAATTGT TGAGATTGAT	480
ACGACTGAAA ATGGTTTTGT CTTGACTCCT GAGATGTTGG AGAAGGCCAT TTTGGAGCAG	540
GGTGATAAGC TCAAGGCGGT TATTCTCAAC TATCCAGCCA ATCCGACAGG AATTACCTAC	600
AGTCGAGAGC AGTTAGAGGC CTTGGCAGCT GTTTTACGCA AGTACGAAAT TTTTGTTGTC	660
TGTGATGAGG TTTACTCAGA ATTGACCTAC ACAGGCGAAG CCATGTGTCT CTAGGAACGA	720
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CTGGTAAAAA CGATGCCGAC CCATGAAGAA GGAATATATC CAACGTCGGG ACTATATCAT	960
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GTCATGACTT TTCCAAGAT TAATAGTGAC CTCTTTGTCA TGGCCTATGC GACCTATGTG	1500
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TGCCATCGGG TTGGTCAGGC TTTTGACTTT TCTTTCAAAT ATGGAGCCTG CCTCTGTCCA	1740
GAGCATTATC ATGAGGATAA GAGACGTTGT CATCTCAATC CCAATATCCC CTATCTGCTC	1800

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GTGTTTGTG	AAGACGGCTT	CAAACGGAGG	TATTTGTAAT	GTTAGAATCT	AAAAAAACAA	16440
CTCGATATGT	ATTTTATGTC	TATCTGATGT	TATTAACTTG	GGGAATCTTA	TTTAAGTTTG	16500
AAACAAATCC	TGAATTTATA	GCATTTTCT	TAGCTCCAAG	GTATATCAAT	TGGATTCCAT	16560
TTTCAGAAC	ACTAATAGTC	GATGGAAAA	TTGTTTTTGC	TGAAATGTTA	TTTAATCTGA	16620
TTTTCTTTAT	TCCATTAGGT	GTTTGTTC	CTTTGATAAA	AACTAATTTA	TCTAGTTTAA	16680
GAATAGTCGG	GACAGGTTTC	TTGATTAGTT	TATGTGTTGA	GTGCTTACAG	TATATTTTAG	16740
CAATAGGTAT	AACAGATATA	ACGGATTGTA	CTTTAAATAC	GCTAGGTGTC	TGTGTAGGCT	16800
TACTGATTTA	TCAAATTTTT	ATAAGAGTGT	TCAAATCACA	GACTAGAAAA	TGGATCAATA	16860
TCTTAGGTAT	GCTTAGCCTT	GGTTTGTCTT	ATCTGTGTTT	ACTGTTACTG	CATTTACTTA	16920
GTGTTTAACT	AATGATTAAA	AAGGAGAATA	TAATGACTAA	ACGCGTCTTA	ATCAGCGTCT	16980
CAGACAAAGC	GGGCATTGTT	GAATTTGCC	AAGAACTCAA	AAAACCTGGT	TGGGAGATTA	17040
TCTCAACAGG	TGGAACCTAAG	GTTGCCCTTG	ATAATGCTGG	GGTGGATACC	ATTGCTATCG	17100
ATGATGTGAC	TGGTTTCCCA	GAAATGATGG	ACGGTCGTGT	GAAGACCCTC	CACCCAAATA	17160
TCCACGGAGG	GCTTCTCGCT	CGTCGTGACT	TGGATAGCCA	CTTGGGAAGCG	GCTAAGGACA	17220
ACAAGATTGA	GCTCATTGAC	CTTGTTGGTG	TCAACCTTTA	CCCATTTAAG	GAAACTATCC	17280
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TGCTTCGTTT	AGCAGCGAAA	AATCATGCCA	GTGTTACAGT	TGTGGTAGAT	CCTGCTGACT	17400
ACGCTGTGGT	TTTGATGAA	TTGGCAGCAA	ACGGCGAAAC	CTCTTATGAA	ACTCGCCAAC	17460
GTTTAGCAGC	CAAAGTATTT	CGTCACACAG	CGGCTTATGA	CGCCTTGATT	GCAGAATACT	17520
TCACAGCTCA	AGTGGGTGAA	AGCAAGCCTG	AAAACTCAC	TTTGACTTAT	GACCTCAAGC	17580
AACCAATGCG	TTACGGTGAG	AATCCTCAAC	AAGACGCGGA	CTTTTACCAG	AAAGCTTTGC	17640
CTACAGACTA	CTCCATTGCT	TCAGCCAAAC	AGCTCAACGG	GAAAGAATTG	TCATTTAATA	17700
ATATCCGTGA	TGCAGATGCT	GCTATCCGTA	TCATCCGTGA	CTTCAAAGAT	AGTCCAACCG	17760

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TTGTGGCTCT CAAACACATG AATCCATGTG GAATTGGTCA AGCTGATGAC ATCGAGACTG	17820
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ACCGTGAGGT GGATGCTGCG ACAGCTGAGA AGATGCACGG CGTTTTCTC GAAATCATCA	17940
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ACGTGGAAGA AATCGCCAAA GCAGGAATTA AGGCCATCAT CCAGCCCGGT GGCTCTGTCC	18420
GTGACCAAGA ATCCATCGAA GCAGCGGATA AATACGGCTT GACTATGGTC TTTACAGGTG	18480
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ATCCTGACAG CTGATGGACC GAAAGTCATT GAGTTCAACG CTCGGTTCGG AGATCCAGAA	19500

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AGCTTGTGTT	TGCGTGACG	TGAAACGAAG	GTTCCCTTTC	CTTGTTGGCG	GACAATATAG	28320
CCATCTTTGG	CAAGGTCGTT	TAAGGCGCGA	ACAACTGTGA	TAGAGCTGAC	ATCGTACATT	28380

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GAAATGAGTT CTGCTTCAGT GTAAAATTTA TCTCCACTGC TAAACTGCCC AGAGATGATT 28440
 TTATTTTTTA ATTCGTCTTT TATGTATTGA TGG 28473

(2) INFORMATION FOR SEQ ID NO: 84:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 6749 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 84:

CCTGATGGGT GGTATGCGAG GATACAGTTC TGAAAATCGC CGTTACTTAA TTAATGGACG 60
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GAAACTGGGT GAATGGTCGC TGAACCAAGC TCTGGCACCA AGACCAATTT CAAGGTGTTA	13500
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TAGTCAACAG GCAAACCGAA TTTCTGACAC ATCTCTGTGA TAGATTGGGT AATGCCAGCT	13620
GGCATGAGGC CTTTTCTCCTC AGCAACCTTG GAAATCTGTA CCATTCCCAT GGCAACAGCC	13680
TCTCCATGCA TGACCTTGCC ATAACCGGCA GTCGCTTCGA TGGCATGGCC AATAGTGTGG	13740
CCAAAATTGA GGTAAAGACG AATACCATTG TCCAACCTCAT CTTCAACCAC CATCTGCGC	13800
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CCATTCAAGC CCGTCAAGAG AGCCCACAGT TCTGGATCCT CAATCAAGCC ATACTTGATA	13920
ACTTCACCCA TCCCTTCAAT CAACTCTCTT TTTCCGAGGG TTTCAAGAAC AAGTGGATCA	13980
ATCAGAACCC CATCTGGTTG GGCAAAGGTC CCCACCATAT TTTTAGCAAA TGGTGTATTA	14040
ACGCCTGTCT TTCCACCGAT AGAAGAATCA ACCTGAGCTG TCAAACCTAGT CGGAATCTGA	14100
ACAAAGTGAA TACCCCGCAT ATAGGTAGAG GCTACAAATC CAGCCAGGTC CCCAACACG	14160
CCACCACCAA GAGCAACGAT TCCATCGCTA CGAGTCAGAC CTTGCTTGAC TAGAAATTCA	14220
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GCTACCTGAA AACCAGCATC TTCTAGGCTG AGCTTGACCT TCTCTGCATA GAGAGAGGCT	14340
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TTGACAACCG TATTAACCGC ACCAATCAAG CGCGCTTCAT CGCTCAGCTT ATCCAAATAA	15120
GGAATCACCT GCTCCTTATA GGGCATGGAC AGATTGATGC CAAACATCTG GTAGCGACGA	15180
ATATTGGCCA CTGTTTCTAC CAAGTCACCT GCTTCAATCT CCCAAGCCAC ATAAGCACCG	15240
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TAAACTATAA ACAACAAAA TAGAACTATG TTATATTTCT TATTCAAAAC ATTCCTCCCT	17760
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TCCCAATTAC AAGGGCCATC AGGATTGCAC TATAAATAAA CAATAAACT ATGGCGACTA	18060
TGCCATTTGA ACGATTACAC AGGTCCGTAA TGCTACTCCA ATTGGTTGAC AGATTTTTAA	18120
CGTCCTTAAA GTAATGGTGG CAAGAAAGGA TGACACTGGC AATGATCCAG ACTACAAGAA	18180
GGTAAATCAT CGAAATGATG GGCAAGCCTA GATATAGAGA AAGACCAAGC AAAGTCAGAA	18240
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AGTCAAAGGG TAAACTCTTA AGAAAATCAA CATTTTCCCT CTCCAAGGAC AAGGCAATTG	18360
AATGCAGGCT GGTGATATTG TTATTGACAA CTGCTATAAA GAGAGCTATA AAAACAAGG	18420
GTAACCAGTA TGGAGGATGA ATGTCTGGAA CTATCTGAGA ATCTCGGATT TTGGAAATCA	18480

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GACCGATCAT CATGAGATAA GGAAGGAAAG CACTTGTAAG AAGCACTGTA ATCACGCCAG 18540
 TCCCCTGTCC CAAGAGGGTG AGGTGGTAGC GTAAAACCAT GCGAAAAAAT CCCTTTTGTAG 18600
 TGGTTGAAAT TCTCTCCTTG CTGCGACGTT CTTTCTTGAC CTTCTCCTCA CTATTAAGCA 18660
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 TTAGTCCTAT CCAAGCGAGC AGACCCACTA AGGCTTCTGT CGAAAAAGGC TCCACTGCTA 18780
 TTTTGTAATA GATATGAAGA GGATAAAGGA GAAATGGAAT GTCTCTAACT TTGTCAACAA 18840
 TACTTCCAAA AGTCGACTGA AGAAAGAAGA TAAATATTAA AGGTATGAGA ACTCCTATCC 18900
 CAATCATCAC ATTCGAAAAA ATAGACTGAT ACTTCTGAA GACCCCTAGT TGAGCCAAGA 18960
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 AACAGATGAT CATCAAGAGA CTGGAAAAAA TGTAAGAACT TAAGACTCTA GCGGAAACAT 19380
 TTAATTTTTT 19390

(2) INFORMATION FOR SEQ ID NO: 87:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 18436 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 87:

CCGAGCGTCG TTACAGACTT TATCAAGATT GGACGCAAGA AGAAATTCAT CATATAAAGG 60
 AAAATATGGC ACAATCTCCA TGGCATACTC ATTACCATGT TGAGCCAAAA ACAGGACTTC 120
 TCAACGACCC AAATGGCTTT TCTTACTTTG ATGGCAAGTG GATCCTCTTT TACCAGAATT 180
 TTCCTTTTGG TGCAGCCAC GGTTTAAAT CTGGGCACA GCTAGAAAGT GATGATTTGA 240
 TTCACTTTAA AGAACTGGA ATCAAAGTTT TACCAGATAC TCCATTAGAT AGCCACGGTG 300
 CCTACTCTGG TTCTGCCATG CAATTTGGCG ATAATTATT CCTATTTTAT ACAGGAAATG 360
 TTCGCGATAA AACTGGATC CGTCACCCAT ACCAGATCGG TGCTTTGATG GACAAGGAGG 420

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GTAAGATTAC AAAGATTGAC AAGATCTTGA TTGACCAGCC AGCAGACTCT ACTGACCACT	480
TCCGCGATCC ACAAATTTT AACTTTCAGG GTCAATATTA TGCCATTGTC GGCGGACAAG	540
ACTTGGAGAA AAAAGGTTTC GTTCGTCTCT ACAAGGCTGT CAATAACGAC TACACAAACT	600
GGCAAGCAGT TGGCGACCTT GACTTTGCTA ACGACCGTAC TGCCTACATG ATGGAATGTC	660
CTAATTTGGT CTTTGTAGAG GAACAACCTG TCCTTCTCTA CTGTCCACAA GGATTGGATA	720
AGAAAGTTCT AGACTACGAT AATATCTTTC CAAATATGTA TAAGATCGGG GCTTCCTTTG	780
ACCTTAAAAA TGCCAAAATG GTAGATGTGT CTCAACTTCA AAACATGGAT TACGGTTTCG	840
AAGCCTATGC AACTCAAGCC TTCAACGCTC CTGATGGGCG TGCTCTAGCA GTTAGCTGGC	900
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CGGGAAAAAC CAGATGCCAT TTTTGCTTCG GATGATTGA CAGCTATTCT GGTCATTAAA	2160
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TCAGACCGAT TCGTCTGAGT TTTTATGATC TTAAATTTTC GAGATAGCGC TGGGCTGTCT	2460
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TCCTTCAACC AATTCACCAC TGAAGAACTC AGCCACAGCT CCACTTCCGT AACTATAAAG	3960

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TTGGGTAGAA TAGACACCAT TTACATAAGG AGTTGTCGAG TAATTTGGTC GCCAGAAATC	4320
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ACGAGCAAAG GGCTGGATGC CCAGCAAGCC ATGCACAAAG ACGGCCGAG CTTACTCTG	4620
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ACCTGCAGGC GCTGTCGTCA CTTCTACAAC TTCTATATTA GCTTCCTTAA TCCCAACAAT	7500

698					
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7560					
ACTTGTAAC	TTTTTAGCTA	CTGTCAAGAC	AATTGAGTA	GGTTTACTCA	CATCATAAGT
7620					
CGTTCGGCA	CCTGGACTTT	GTTTCATAAT	CGTTCCTGGT	TCGCTTTCGC	TGGACTCTTC
7680					
TTCTCTATC	TTAATCAAAT	TCTCAGGAAC	CTTCTTCTGC	TTGAGTTCCTG	AGATTACTTC
7740					
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7800					
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7860					
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7920					
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8280					
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8340					
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8460					
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9000					
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9060					
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9120					
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CACTGCCACT	TCTTCCCCAT	CTAAGATTAA	GTCTTTGGCT	AGGTAGACAT	CCGCCATACC
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9300					

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TGATACCAGC CAACTTAGCA ACCTCAATCG AATGGCGCAA AACATTTTGT CCATATGAAG	16440
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TAGCAATAAT CTGCCAGGC ATCTTCTGTA AACTTGAGCA GCATTTCTTA CTCCTCAATA	17940
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AGGACTACAA TGTCCTCATC TGGATTTTTA TTGACCACCG TCAAAGGCTC AAATTCATCA	18120

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TTTACCTTCT TCATGTAGTC CTTTAAATGA TTTCGGAATG TTGAGTAAAG GACTGCTTCC	18180
ATAACCATAC CTCGTTTTC TAGCTTTTCCA CTATTATACA CGAAAAGAAA GAAATGTGCA	18240
GGAACCTGTA CAAGATTTTC TTTTCTATCT ATTTATACTC AATGAAAATC AAAGAGCAAA	18300
CTAGGAAACT AGCCGCAGGC TGTACTTGAG TACGGCAAGG CGACGTTGAC GCGATTTGAA	18360
TTTGATTTTC GAAGAGTATT ATTCGTAAAA AATCTCAAAA AGCCTACCTT TCGGTAGACT	18420
TAGTTTGTTC CTATTC	18436

(2) INFORMATION FOR SEQ ID NO: 88:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 7001 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 88:

ACGTAGAAAA ACTATTTCTA TCACAGATAA TATTCCTGAT GTTGTGGAG GTATTGAAAT	60
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AGAAATTTTG AATGAAGATT ATCCTATTTTC AGAAATCAAT TCCACCATTA CCAATATGAT	180
AAAAACAGCT ATAGAGTACG TCCCTTTGGA AACAAAATTA CTTGGATTGG GCTTATCAAT	240
ACCTGGACAT TATAACAAAG ACTCCGGAAG TATCATTACA AACAAACCCA TATGGGAATC	300
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CGATTGTATG GCTATAGGAC AATACCTTTT TAATCCACAC AATACCCCG ATAACCTTAT	420
TTTCCTACAC GCTGGATTAG GTATTTACAC TTCCTTTTTC ACAAAGAAA AAATAGGAGC	480
CTCTAAAAAT CCTTATATCG GAGAAATTGG ACACACCATT GTCGAATTGA ATGGGCAATA	540
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CATCAATCCT GCTGATAAAA TCTATATCAA CAGTCAATTG CTTAATTATC AACCTTTCAC	840
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TATCGTCGCT TTTTTCATAG AACATAGCAA TGTATTACAA GATATTATTT CACCTTAATA	1020
TATTAGAAAT CTATAGACCT GTTTAAATCA ACTATAACCT GTAGTAGATA TCTCGTATTT	1080

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TGATAGCATT TCTACAAATA CAAGTAAAGA GAGCGGATGA GATTCAAACG AAATATGTCA	1860
GTGCTTTGGC ATTCCTAGCC TTCATATCAT TTAAAGAATT CTATAGACAA AATTTTTC	1920
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AATACTAGTG TAACTATCCT TCCAGTCAGA AGCTTGTCAG ATCACACCGA AAATCTTCT	2160
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CCCATATGAC CTATAATGAA AAGCGACAAA ACAACTCATT AGAAAGAATC ATATGGAACA	3000
ATTACATTTT ATCACAAAAT TACTAGACAT TAAAGACCCT AATATCCAGA TTTTAGACAT	3060
CATCAATAAG GATACACACA AGGAAATCAT CGCCAAACTG GACTACGACG CCCCATCTTG	3120
CCCTGAGTGC GGAAACCAAT TGAAGAAATA TGACTTTCAA AAACCGTCTA AGATCCCTTA	3180
CCTCGAAACA ACTGGTATGC CTTCTAGAAT TCTCCTAGA AAACGCCGTT TCAAGTGCTA	3240
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TCGTATTATC AACCAAAAAA TTGCGCAAAA GTTGATTGAG AAGATTTCTA TGACCGATAT	3360
TGCTCATCAG CTGGCCATTT CAACTTCAAC TGTCAATCGC AAGCTCAATG ATTCTCACTT	3420
TGAGCATGAT TTTTCGCGTC TTCCTGAGAT TATGTCCTGG GACGTTGAAA CAGTCCGGGG	3480
AGTGACTGTT TCAATCGGGA GATGGAGATG AGCTTTATTG CGCAAGATTT TGAAAAGCTC	3540
GATATCATCA CTGTTCTTGA AGGTAGAACA CAAGCTGTCA TCCGAGATCA CTTTCTTAAA	3600
TATGATAGAG CCGTCCGATG TCGCGTCAAA ATTATTACTA TGGATATGTT TAGTCCTTAC	3660
TATGACTTAG CTAGACAACT TTTCCCGTGT GCTAAAATCG TTCTTGATCG CTTTCACATT	3720
GTACAACATC TTAGCCGTGC TATGAGTCGT GTGCGTGTC AAATCATGAA TCAGTTTCAT	3780
CGAAAATCCC ATGAATACAA GGCTATCAAG CGCTACTGGA AACTCATCA ACAGGATAGC	3840
CGTAAACTCA GCGATAAACA TTTTATATCG CCTACTTTTC GTATGCATTT AACCAATAAA	3900
GAGATTTTAG ACAAGCTTTT GAGCTATTCA CAAGACTTGA AACATCACTA TCAGCTCTAT	3960
CAACTCTTGC TGTTTCACTT TCAGAATAAG GAACCGGAGA AATTTTTCGA ACTTATCGAG	4020
GACAATCTTA AGCAGGTTCA TCCTATTTTT CAGACTGTCT TTAAAACCTT CCTCAAAGAT	4080
AAAGAAAAGG TTATCAACGC CCTTCAACTA CACTATTCTA ATGCCAAACT GGAAGCGACC	4140
AATAATCTCA TCAAACCTAT CAAGCGCAAT GCCTTTGGTT TTCGAAACTT TGAAAACCTC	4200
AAAAACGGA TTTTATATCG TCTGAATATC AAAAAAGAAA GGACAAAATT TGTCCTTTCT	4260
CGAGCTTAGC TTTTTCCTCA CCCACTACAG TTGACAAAGA GCCGGAAAAA GGAACAGCCT	4320
TAGCTTTCCT TTCATTTCTT TTTATTTCCC TCGTAGTAAA CGTGCTAGCT TCCACAAAAC	4380
AAACAGGATT CCCAGAAATG CCAGTACCAC TAGCCACGG TACAACCATT GAGAGGTTGC	4440
AACACGCGAT ACAGATTGTC CTTCTTTCGT AAAAGCAACC CTCGCAACTG CAGCTGTTTG	4500
TGGATCTGAT TTTTGATAAA CAGCGACTCG TTCAAATTC ACTAATAAGC GTTTATTAAA	4560
GGTAGGAATC GGATCGCAGG TTATCAAGGT CATGATATTT TTAGAGCTAA CCGATTCTAA	4620

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TTTTTCCCAT TCCGACGGTA AAATAATCTC TGTGTCCATC ATCTGATATT CTACAATTTT	4680
CTGGCCATTA TCATAATAAA GAGCATCTCC AACTTTTAGC TGATCCAAAT GGCGGAAAAA	4740
GACATGGCTT GGCTCTGCAC GGTGCCCAGC AATCACTGAG CGAATCCCTG TACCATCCAG	4800
AGGCAGCGGT GTACCATCCA CATGAGCCAA GCCCATCCCT AAATGATGAT AATCTGCTCC	4860
CAAATAAACC GGCTCCATGA TTTCCAAACT TGGAAATAGAC AAGTAACCAT AGACTGCATC	4920
AGGGTCGTCA GACACTTGGT AATTGACCTC ATATCCCTCC GCCAAAAAAG GATCTACAAT	4980
GCGATTTTGC GAAGCCAAGC GTTGATTGTA GGCGAGAGAA TGGTTCGTGT GTTCTTGGA	5040
CATTTCAAGT GTCATGGATT TCACAAATGT AGCATGACCT TTCACCTGTC CAAGAGACTG	5100
CAACACCATC TGTCCAAAAC AATAAATAGG AATCAAACAG GCTACCAACA TCAACAAGTA	5160
TCCCAATAAG GCTCGTAGTT TAGTCCTTGA CATGACGCCC CTCCAATTGC TTTTCTAGTC	5220
CTTTGACAAT CCGTCGATTA CGATACACGC GATACAGCAA GAGAAGGATG ACCGCCATCG	5280
CTCCTAGTAA TAACCACAAC CAGAATTGCC CACGCTCTCT CACCGCTCGA TTCCGCTCTG	5340
CAATTGGTGC CGTATACGGA ATCCGCTTCC CACGTACCAA CAGACGATGA CTGTTAATCA	5400
TATACGGTGT ACAAGTCAAC AAGGTCGCAT AATCTTCCCC ATGTTGAATC AAGACAGGCT	5460
CAAAGTCATT CGGCTCCACC GTCACATCTT GATCCACTTG GTAGGCCAAC ACCTGATCTA	5520
AAAGTGAAG ATAAAAGATA TCCCCTTTTT TCATCTTATC CAATTGACTG AACAATTCTG	5580
CCGTGGCAA TCCTCTGTGA GCAGTGATCA CTGTATGGGT ATTTTCACCT CCAACAGGCA	5640
GCGAAGCCCC TTCTAACAGC CCTGCCCTT TCTGAAGAAT GTCCTCACTC GTTCCGACAT	5700
ACATCGGAAT TTCCTGATCA ATCGCAGGAA TTTCCACATA GCCAATCCGC TCATGGACCT	5760
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GAATTTCAAG TGGTTTCAAG GTCGCATTGA AGGCTTGAGC CAAGCGCAA CGTCTCTCAA	5880
GTTCTGCCTT ATCCATCTGG GAAACCGTCT CATCAAATC TTTAATAACC TCGTTTGACT	5940
CAATACGATA ATAATAACGA GACACCAATG GATATATCGC AACGGCGAAT CCTACTAAGA	6000
AAATCAGAAG AAGGATCAGC GGATGTTTCT TCTTTTTTGT GCCTTTTTTT CGTGAACGTC	6060
TACTGTTGTC CATCCTCCAC CTTCACTTCC TTCCTTGCTG CTTTCAGCGC CTTCAAAGCC	6120
TTTTCCGGTT GTTTTTTCTT CTTGCGCAAG CGTCGAATAA TCCATAAAAG AATCACAATC	6180
AAACCAACTG CCACATAAAA CAGGTAGCGA TAGAGATGAC TGAGTTTGTT TGCTGCAATA	6240
AATTCCTCCT CAACCTCTGC TACGTACGGT ATCCGATGCC CCCGAACCAA TAGACGATGG	6300
GTATTGATCA TGTATGGCGT ACAAGTCAGC AAGGTCACAT AATCATGACC TGGTACAATC	6360

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AATAAATCAT CAAAGTTCGT CGGCTCAATC ACCTTTACTT GATCCACTTG ATAGGCCATC	6420
ACTTCCTTGA TATTGTGCAC ATAAACTTA TCCCAACTT TAAGTTTGGT CAAATCCGTA	6480
AACATCTTAG CTGTTGGCAA ACCTGTATGT GCCGTAATCA CCGCATGGGT CGAATTGCCT	6540
CCGATCGGCA GAGAAGTTCC CTCTAGATGC CCAGCCCCTT GCTGCAATAC CTCTTCAGCA	6600
GTACCAGCAT AAACCGGCAA ATCCACGTCA ATAACGGGGA TTTCCACATG CCCCATCCGC	6660
TCATGGATTT CTAACATACG TGCATACTCT GCTCGCCCTT TTTTCTTCAT TTCTTCCGAC	6720
CAAGGATCGC CACTCACTAC ATTATTCAA GAGTCATTGA AGGCTTGTGC CAATTTTCATT	6780
CGTTCATCAA TGTCAGCCTC ATCCAACGTT GCTTTTTCTT TATCAAAGTC AGCAATTGT	6840
TGATTTGATT CCACTCGATA ATACAAGCGA GACACCAGCG GATACGCCAT TACCGCCATT	6900
CCAATGAAAA ATACCACTCC TAATAGGAGA TTATTTTCGTT TTTGCTTTTT TGTTTTTACC	6960
ATTTTATCA GCATCCCTTT ATCTTCAAAC TTCAGGGTAT C	7001

(2) INFORMATION FOR SEQ ID NO: 89:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 10411 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 89:

GAGGGAGCTT AAGAAGTTAC CACCGTCCTC TAGCGCCTTA TCCGCATCAA AGTTAAGGTT	60
GATATTTTAA AACTGTCCG CAGCTTGTGA TACGATGCTT TGTTTAAGGT CATTTAGGGT	120
TTTAGTGAAA TCTGCATTGC TGAGGATATC ACTCTTTGAG AGATTCAAGG CAAAATTGAT	180
GATGATATTG ATCTGGTTTC CTGTTATGAC CTGATCAAGT TTGTAATTTT TTAAGGTATC	240
TTCAACAATC TTGCGGATAT CTTCTTCTGT CAGATTTCCC TTACTTTCTT TAGCTTTGGC	300
GAGTCCTGAC TTGATATCAG CTAGGGCAAC GTTTAATTTA TTAGCATCAT AGCCTGATTT	360
GTCCTTGTTT TCAGCATTGA TATCTGACAA AGCTTTTAGC TCTTCTTGAG CCAATCTTT	420
ATTAGCTTGT GGCACCTTGG CTCCATTAGC CTCTAGCGAA TAGTAAATCC CTGCTAAAGC	480
ACTTTCTCCT GTAACGGAA TAGGGGCTGC TACAGTGATT TTGGCATGTT CCATACCCAG	540
CGTTACTGCT GCGTTTCGGT ACATATCCTG AGTCACCTTA GTGATATTTT CTGGTGTTTC	600
AATCTTGACC TCAAGTGGCG ATTTGTCACC TAGCTTTTGA ATCTTGGCTG ATGAATACAA	660
CTGTAAGCTA GAGTCATTGG CCACATTCAT GATTTTAGAA TAAACATCAG GTGTCATGGT	720
CTTGAGTTCT TTGGTATCTG TTGAGGCATT GTAGCCCAGT TTTTAAAGAG TTTGATTTTT	780

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TTGGTCTTCA GATAGGGAGG AACCTAGGAC ATATTCAGGT TGGACATAGG TTTCATCGAT	840
AACCTTTTGA ACATCTGTTG CTGCATGGAC GCTATTCATA GCTGTTACTG CCCACAAGAT	900
CGCAGCGCTA GTCAGAAAGA GTTCTTTTCT CATAGGGAAT TTCCTCCTTT ACTTCTTTAG	960
AGTAATATAT CTATCTTAAA GAAAACCTTAT AACAAAAACA CCTGGTCTAG CCAGATGTTG	1020
AAAAGAGAGT GAAACATTTG ATGATGTAAA GGTTAAGTCG TACCTGTCTA GAATAATAAT	1080
AGTTTCCTCC ATTTACATAG AGTTCAGCAC CGTGAAAAAT GGAAATGGGG TGAATATAAC	1140
TATAAGTCTT TCCAGTCCTA TTACCAAGCA AGGGGGCAAC AGTCTCACGA GAGTACTGTT	1200
TGGCTAGAGC CAGGGTATTT TCCTTGCCAT TTTGGGCGAT AAAATCGATA TAGGCAGGTC	1260
CAAAATTATA GGCTTGAACA GCTGTCCAGA TATCTACCCC CTTCTTCTGC GCCAGATAGA	1320
GATTGCCTGT CAGAGTTTGA ATGCCTTGCC GAATGCTAGA GGCATTATCA TTGATGGTGT	1380
TGGTGGAACC ACTTGCAGAC TCACTAGACT GCATAACATC GCCTTCTTTT CCTTTTGTTT	1440
CAGTATAAAT CATAGCAAGC ACAAGCTCTT CGTTTGCTGG GGTGTCTTGT TCACTCAATA	1500
TTTCTCGCAC CATGGGTGTA TAGGTCATGA CTTGTTTGAC ATCTTGATGA ACGCGGTAAG	1560
CTTTATAGCC AGCAAAAAGG AAGACTGCTA GTACAAGCAC TCTTCGAATT CGTTTAAACA	1620
TTATTTACTT TGGATATCCT CGATATTTTT GATTAAGATA GAGTAGGTTT CATTTTCGTT	1680
TTGGATAAAC TCAACAGACT CGGCGTCTTG ATAGACGTTA TTGGGAACGA TGAGCTCAAT	1740
TCCATTTGAT AAGGAGAGTT TTTGGTTTTC AAATTTCTTT AATTGGCGAC TGGCATCAAT	1800
TTTCATCAAT TGAACAGGTT CTGGTACGGC TTCTTTGACT TGGTCAATAA AGCTCAAACG	1860
AGCCGTCAGA TTGTGTCAA AAAGGTCATT AGCCAATTTT TCAGGTGACA ATTCATTGCT	1920
TTCTTCTAGG TTGTGAAAA TAGCTGATTT GACCTTGAT TGAAATTGAA AATCATCTGT	1980
GTTAAAAGAT TTAGCAATTC TCTGGGCTGT TTTTCCAGT TCCTTGATAG ATTTTTTAGG	2040
AGAAATCTTA GGAGCGACAG CAAGAAGATT ATCTGAAAA TAGTTCAAAA AAGTCCCGTT	2100
GTACTTGATT CGTTTTTCAA TCAGGTGATA CTGCTACTC TGAAGATTGA CCACCAAGGC	2160
CTCATCAGCT CCTGTTCCAA ATCCAGGCAG GTTATTCTGA GTTAGCTTGA TTGGATTATC	2220
AACCTTCTCT CCGAGGTGGG TCAAGGTCTC CCGCAGGGCA ATTCGCAAGA AAGCGAAATG	2280
TTCTACACCT TCTTTAGAAA ATTGCACAAA AATCAAGTCA TTGGTCTTGA GATTTTCAGA	2340
AATGCTAAAC TCCTCTTTCC AGAGATTAGC CAGCGTTACT GATGTCTCCA ACAAATCGTC	2400
TGTAATATGA TTGAAGAAGG GATTTTCTTC TTCGAAAAAT CCAGTCTTGG CTTTCATCTGA	2460
ATACACATGT TCAATTTTTT TACGCAGGTA TTCTTCGATT TTTGGAGTAA TATTGAGAAA	2520

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CTTATCTGCT AAGAACAGTT CGGTATCATC CGGACTGAAC TGGTGAATAA TGGCTTTCTT	2580		
AATATAAATG TCCATAAAAG TTTTAGTCCT CGTATAATGG GAAGGCATCT GTCAATTCTT	2640		
TGACTGCACT TCTCACTTCT TCTAATACAG CCTCATTTTC TGAATTCTTA AGGGTTTAA	2700		
TGATGAGTTC AGCCACTTTG CGACTTTCTT CTTCACCAAA TCCACGTGCA GTAATGGCTG	2760		
CTGCTCCGAT ACGAATCCCA CTTGTCTTGA ATGGTGACAA GCTTTCGTAA GGGATTGAGT	2820		
TTTTATTAA GGTAAATATG ACTTCATCCA ACAAGTTTG AGCAACTTTG CCGTTTCTA	2880		
CAACTTTAGT CACATCAACA AGGAAGAGAT GGTTTTCAGT TCCACCTGAA ATAATACGGA	2940		
AATCAGGGTC TTGCAAGAAG ACATCTGCCA TAGCCTTGCT GTTCTTAATT ACATTGGCAG	3000		
CATATTCCTT GAAGGCTGGA TCCAAACTT CTTTGAAGGA AACTGCCTTA GCCGCCACAA	3060		
CATGCTCTAA AGGACCGCCC TGAATACCTG GGAAAATAGC TGAATTGATT TTTTTCAGCA	3120		
GTCTTCGTC ATTGGTCAAA ATCAAACCAC CACGAGGTCC ACGAAGGGTT TTGTGGGTCG	3180		
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CAGCGATATG GGCCATGTCC ACCATGAGCT TCGCACCGAC AGCATCTGCG ATTCACGGA	3300		
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AATGACCACC TGATGCCAAA TCCATTCCCA TAACCGTATC ACCTGGCTCA ATCAAGGACA	3540		
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CGAAAATTC TTTTGCGCGT TCAATAGCAA GAGTCTCTAC AACGTCTACT ACATCAGTTC	3660		
CACCATAATA ACGGCGTCCT GGGTAAACCCT CGGCATATTT ATTTGTCAAG ATAGACCCTT	3720		
GAGCTGCCAT AACAGCCTTG GAACTACGT TTTCCGAAGC AATTAACTCG ATATTATTTT	3780		
GTGGCGTTC TTCTTCTTTG GCAATAGCAT TCCAGAGATC AGCATCATAT GCTTTAAAT	3840		
CATCTTTGTC AAAAATCATA GGTCTTCTCC TTTATTGTGT GACTAGTCCA TTAGTTTGAT	3900		
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CGGATAAACC CATAACCACA TCTTTTGCT TCTTCTCCA ACCCTGTAG TAAACTTTTA	4080		
CCAATACCTT GACCTTGCGC TTGAGGTGAA ACTGCTAAAG CTAAGATATT AAATCCTGCT	4140		
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GCATCCTCAT AGCCAAGTAG GAAATGATGG GAATCCTGAG ACAGTCTAGC TAGTTGGCTA	4260		
GCCGTTTCCT CTGGACTAAA AGTATAACCC AAAGCCTCTT GGTGATGTC ACATATAGCT	4320		

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TTCACATCAG TTTCTCTTAA ATCTCTTAGC ATCTCATTC	TCCTCAAAAG AAATCTTTGG	4380
CAACCAGACA AGAATATCTT CTCGCTTAAT GGCCCTTGA	CGTAAGATTT TCACCTTGTC	4440
TCCCGACAAA TTCAAAATAG TTGAATCCTG TCCAGTTAGA	AAAGCATCGT CTTCCAGACC	4500
CAGAACCTCT TGGTCAAAAT CCTCTAGAAT TTGATTAAAG	GTCACTCCAC TCGCCTGACC	4560
TGAGATATTG GCAGACGGCC CAATCAAGGG ACCTGTCTCT	CGAATCAAAT CAAGGGTAAT	4620
GGGATGACTA GGCATCCGAA ATCCAACAGT TGCAAGGCCA	GAATTGACCC AATAGGGAAC	4680
TCCGTCATTA GCTTCGAGAA TAATGGTCAA GGGACCTGGT	AAAAAGATCT CTACAAGTTT	4740
TTGAAGATAA GTTGGCTGAT TCTTTGAAAA GTACAAGATG	TCCTCTAAAG AGGCAACATT	4800
GAGATTGAGC GCCTTGCTCT TACGTCGACG TTTAAGCTGG	TAAACATGGT CAACTGCTTT	4860
TTCTGCTAGC GCCTTAGCAA AGAGACCGTA AACTGTCTCT	GTAGGCCAAA CGACAGCTCC	4920
ACCATTTTCC AACTCTTGTC TAATCCTGTC CATCATCAAC	GACAACCATC CTATCTTGAC	4980
CAAATTTGGT CTTGAGTGTT CGTACTCGCT TTTCAGGAAG	ATGTTTCCTA AAAAGTTCAG	5040
GAACACTTTG ACCTTGCTTG TATCCAATTT CAAGGTAAAT	CTTACCACCA TCTTTGAGAT	5100
AGTCTTTTGC ATCTTCCGCA ATTCTACGGT AAATAGCTAG	GCCATCCTCA TCTGCAAAGA	5160
GAGCTAGATG AGGCTCCGAA TACAAGACAT TCAAGCCTAC	CTCTGACTCA TCTTCACGAG	5220
AGATATAGGG TGGATTGGAA ACAATTATAT CATATTTTTC	AGAAATTTCT GTAAAACAGT	5280
CAGATTTTTT TAAAAATATT TGAAGATTTT GATTTTTAGC	ATTTTCGCTA GCTACATCTA	5340
AAGCATCTTG GGAAATATCT GCTGCCGTC CTGACCAATC	TGGTCTGTTT TTTGCTAGAG	5400
CGAGAGCAAT AGCTCCACTA CCTGTTCCGA TATCTAGGAC	CATAAGATTT TTCACAGGAT	5460
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CATCCACCTT TAAATGCATT CCATAAAAT CTGCCTGTCC	AATGATGTAC TGAGCTGGCT	5580
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ATAATTGAGC TAATTTCAAT ATTTGTTTAA TTCTTCTAGT	TTTTGTGTTT GGTCATAAAG	5820
CACCAAGGCA TCCACAACCT CGTCCAATTT ACCAGACAAA	ATCGTATCTA GTTTTGGAG	5880
GGTCAAGCG ATACGGTGGT CTGTGACACG GTTTTGTGGG	AAGTTATAAG TTCGGATCCG	5940
TTCTGAACGG TCACCACTAC CGATTGTCGA CTTACGCTCA	GCGTCTGCT CATCTTGAGC	6000
AATCTGAGCA AAGTGGTCAG CAACACGGGC ACGGATGATT	TTTATGGCCT TCTCACGGTT	6060

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CTTCTGCTGG GTACGTTCTT CCTGCATCTC AACCTTGATA TTGGTTGGCA AGTGAACGAT	6120
ACGAACGGCA GTCGCAACCT TATTGACGTT CTGTCCACCA GCACCAGAGG CGTGATAGAT	6180
GTCGACACGA AGGTCTTTTG GATCAATGTC GTATTCAACC TCTTCAACTT CTGGCATAAC	6240
AAGAACTGTC GCTGTCGAAG TATGAACACG GCCTTGGCTT TCTGTACAG GAACACGTTG	6300
CACACGGTGG GCACCTGATT CATACTTAAG CTTAGAGTAT ACAGACTGAC CTGAAACCAT	6360
AGCAACCACT TCTTTAAAC CACCGACACC ATTCATAGAG GCTTCCATGA CTTCAAAGCG	6420
CCAACCTTGG GCTTCCGCAT ACTTTTGGTA CATAGTAGC AAATCTCCAG CGAAAAGTGC	6480
CGCTTCGTCT CCACCAGCTG CTCACGGAT TTCAAGGATG ATATTCTTGT CATCGTTTGG	6540
ATCCTTTGGA AGGAGCAAAA TTTTCAGTTT TTCTTCATAT TCTTCTTTT CAGCCTTGGC	6600
ATCTTTGAGT TCTTGCTTGG CCAATTCTTC CAAGTCCGCA TCTCCGCTG ATTCCTTAAT	6660
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GACATCAGGG TCACTCAGCA ATTCTCCTAA TTCTTCATAA CGGTCTTCTA CAACTGTAG	6840
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TGCCTGTTC TTTTCTGGTT CATAAGACAA CCAAAGTTTA TTGCTTAAAC CTGCTGGCGC	7020
TGTTCGAACA TAGTCTAGTA CTTTATCCAT AATTGGTTTA AAATATCCTT GATTTTGAAA	7080
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TGTAACATCT CTTAGTTCAA TTGTCATAGT TTTGCTCCTT GTTAGAGGTT ATCATTTGGC	7380
CAAAATAATG TTTACGGCAA ACTGAGATAT AGGTTTCGTT ACCACCAATC TGGATCTGTT	7440
CTCCATCGTA AACGGGCGT CCATCCTGTG TTCGCAACAC CATGGTCGCC TTTTCTTGC	7500
AATACTGACA GATGGTCTTG ATTTCTGCAA TCTTGTCTGC TAAAAGCAAG AGATATTTGG	7560
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CATCGACCAA AACACAGTAA GGTTTTCTG GTAGGTCTCG GATATAGCCA AAGATATCCG	7740
TTGTTTCCTC AATCGCAAAG GCAGGGCGTT TCATGCCAAT TCGACTCGAC ACATAGCCAA	7800
CGCCGTCACG CGTATCCAGA GCCGAGGTCA TAATCACAAC ACCTTTTCCT TGCTCCTCGT	7860

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AGTTATAGGC CACTTTGAGA ATCTCAATCG TTTTACCAGA GTTCATGGTC CCATAACGAT	7920
AGTACAAC TGCCATGTTT CTTGCTTCAC GTCCATTCT AAATTTTGC TACATTCTAG	7980
TATATCATAA TTTTCTTAAG CTTTAAACGG CAAAATGTGG TAAAATAGAA GAAATCAAAA	8040
ACTAGTGGAG GAAGCTATTA TGCCATTTGT ACGCATCGAT TTATTTGAAG GACGCACGCT	8100
CGAGCAAAAG AAAGCTCTTG CTAAGGAAGT AACGGAAGCA GTTGTCGCA AACTGGAGC	8160
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CAAGTAGCAT TCATTGAAGA AATATCCTAA ATTTGTTACA ATTTGAAAAG AAAGTGGAG	8340
AATTTCCAAG AAAAGAGCTA TTAATTAAG GAAACATTAT GATTACACGT GAATTTGATA	8400
CCATCGCTGC TATCTCTACT CCACTAGGTG AAGGGCTAT TGGTATTGTC CGCCTGAGCG	8460
gAACAGACAG TTTTGCTATT GCGCAAAAGA TTTTAAAGG AAAAGACTTG AACAAGGTTG	8520
CCAGCCACAC TCTCACTAC GGTACATTA TTGATCCTCT GACTGGTAAA GTCATGGAGC	8580
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ACTTGACACA GGCAGAGGCT GTGATGGATA TCATCCGTGC CAAGACTGAC AAGGCCATGA	8820
ACATTGCGGT CAAACAATTA GACGGCTCCC TTTCTGACCT CATTAACAAT ACCCGTCAAG	8880
AAATCCTCAA TACACTTGCC CAAGTTGAGG TCAATATCGA CTATCCTGAG TATGACGATG	8940
TTGAGGAAGC CACTACTGCT GTTGTCCGAG AGAAGACAAT GGAGTTTGAG CAATTACTAA	9000
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TCAATGGTGT ACCTCTCAA TTGATTGATA CAGCCGTAT TCGTGAAACG GATGATATCG	9240
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AGGAGACTAA TCGCATTATT CTTCTTAACA AAAGTACCT GCCTGAAACG ATTGAACTT	9420
CGGAACACC TGAAGATGTC ATCCGCATTT CAGTTCTTAA AAATCAAAAC ATCGATAAAA	9480
TCGAAGAGAG AATCAACAAC CTCTTCTTTG AAAATGCTGG TTTGGTTGAG CAAGATGCTA	9540
CCTACTTGTC AAACGCCCGT CACATTTCTT TGATTGAGAA GGCCGTTGAA AGCCTACAAG	9600

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CTGTTAACCA AGGTCTTGAA CTAGGGATGC CAGTTGACTT GCTTCAAGTT GACTTGACCC	9660
GTACTTGGGA AATTCTAGGA GAAATCACTG GAGATGCTGC TCCAGATGAA CTCATCACCC	9720
AACTCTTTAG CCAATTCTGT TTAGGAAAAT AAGAAAAATC CATGATCCTT CATTCGGTCA	9780
TGGATTTTAG GTTCTATAAT ATTTGTAGTG GGTAAATCCA CTATAGATAT TATGGAGCCT	9840
ATTTTATTGT AGAAAAAAG TCCCATATGA CCTATAATGA AAAGCGACAA AACAACTCAT	9900
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TAATATCCAG ATTTTAGACA TCATCAATAA GGATACACAC AAGGAAATCA TCGCCAAACT	10020
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TCAAGAAGAA TCACCAAATC CCTCGTATCA TCAACCAAAA GATTGCTCAA AAGTTAATTG	10260
AAAAGATTTC TATGACTGAT ATTGCCCATC AGCTTTCCAT CTCAACTTCA ACTGTTATTC	10320
GTAAGCTCAA TGACTTTCAC TTTAAACATG ATTTTCTTG TCTTCCTGAG ATTATGTCTT	10380
GGGATGAGTA TGCTTTTACA AAAGGGAAGA T	10411

(2) INFORMATION FOR SEQ ID NO: 90:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2393 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 90:

GTTTTGGGTT CTGGAAATTA TCAGATGGTT GGAAAAGCCG TCCACATCAA GATAGTGTTT	60
GGAGATTTAA GTTTAAATTG AAGAACTAA CACAGAGGAA ATGGAGTATA GACCTAACAA	120
GACGTATTGA GCAACTGAAT TTGTCTATTC GAGGATGGAT AACTATTGC TCATTGGGAA	180
ATATGAAAAG TATAGTCGCC AGCATAGATG AGCGCTTGCG TACTCGCCTA CGAGTGATTA	240
TCTGGAAGCA ATGGAAGAAG AAATCGAGAC GATTATGGGG ATTGCTTAAG TTAGGAGTTC	300
CTAAATGGAT AGCAGATAAG GTATCTGGCT GGGCGACCA TTATCAATTA GTAGCTCAGA	360
AGTCGGTACT TAAACGTGCT ATATCAAAAC CAGTCCTGGA AAAACGTGGA CTGGTTTCGT	420
GTTTGGATTA TTACCTTGAA CGACATGCGT TAAAGTTAG TTGAACCGCC GTATGCCAAA	480
CGGCACGTAC GGTGGTGTGA GAGGGGCTAG AGATTATCCC CTA CTGATT AACTCCCCTG	540
AAATTATTT TAATTATGCA AATTTCACGT ATTTTGTATG CTGAGACGAC GATCCTGGGA	600

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ACTTTTCAGA TATTTTTTTG ACTATCTAAA TCTATCATTA GAAAAGCTTA GAGCGCCAAA	660
GGATTTGAGC GTTTTTCTGA TTTTAAAGAC TTTTCCAGT CTCTTTTTCG ATTGAAGATG	720
TAATTATTCT ACTAACTAAC TAACCTCTTA GTACTAGCCA ACAACGATAA TCATAATTCC	780
TCCTAAAATT AGGAATAATA AAGGCAATAG TTTTGTGTTT TTCATGTAAA AAACCTCACT	840
TTTGTTTTCT GCTATTTTAT GCTAAAATAT TAAAAATCAA ATTTAATTCC AAAGTTTGTA	900
ACTAAAGGGG GAGCGCTACA TGTCTAATTC ATTTGTCAAG TGTTTAGTCT CTCAATTATT	960
TGCAAATTTA GCAGATATTT TCTTTAGAGT AACAAATCATT GCTAACATAT ACATTATTTT	1020
AAAATCAGTA ATTGCCACAT CACTAGTTCC TATCTTAATA GGAATATCCT CTTTGTGTC	1080
GAGTCTTTTA GTTCCGTGCG TTAATAAAAG GTTAGCGCTA AATAGGTTT TATCTTTATC	1140
TCAATTGGA AAGACTATAT TATTGGCGAT ACTGGTAGGA ATGTTTACCG TAATGCAATC	1200
CGTAGCGCCT TTGGTGACCT ATCTATTTGT TGTGCAATT TCCATACTAG ATGGTTTTC	1260
AGCACCCGTT TCCTATGCTA TTGTGCCACG CTATGCGACC GATTGGGTA AGGCTAATTC	1320
AGCCTTATCA ATGACTGGTG AAGCTGTTCA ATTGATAGGT TGGGGATTAG GTGGACTCTT	1380
GTTTGCAACA ATTGGTCTGT TACCTACCAC GTGTATCAAT TTAGTCTTGT ATATCATTTT	1440
TAGCTTTCTG ATGTTATTTT TCCCTAACGC TGAAGTGGAG GTGTTAGAGT CAGAACTAA	1500
TCTTGAAATT TTGCTCAAAG GTTGGAAGTT AGTTGCTAGA AATCCTAGAT TAAGACTTTT	1560
TGTATCAGCA AATTTATTGG AAATTTTTTC AAATACGATT TGGGTTTCTT CCATTATACT	1620
TGTTTTTGTA ACGGAGTTAT TAAATAAAAC GGAAAGTTAC TGGGGATATT CTAATACAGC	1680
ATACTCTATT GGTATTATAA TTAGTGGCTT AATTGCTTTT AGGCTATCTG AAAAGTTTCT	1740
TGCTGCTAAA TGGGAACCCC AATTATTAC CCCTAATCTA AAAACCATCC AGAATCCTTG	1800
CCTTAGCTTA GATCCTGGAT GGTTCCTTTT TTCACCCAAT GGGTGTTTTT TACTAGACAA	1860
AAAAGAGTTT CCCCTTTATG GTATAAGTGT AGAAAAAAC ACAAAAAGAA AGGAACTCA	1920
CATGAACAGT TTACCAAATC ATCACTTCCA AAACAAGTCT TTTTACCAAC TATCTTTTCA	1980
TGGAGGTCAT TTAACCCAGT ATGGTGGTCT TATCTTTTTT CAGGAACTTT TTTCCAGTT	2040
GAACTAAAA GAGCGGATTT CTAAGTATTT AGTAACGAAT GACCAACGCC GCTACTGTCG	2100
TTATTCGGAT TCAGATATCC TTGTCCAGTT CCTCTTTCAA CTGTTAACAG GTTATGGAAC	2160
GGACTATGCT TGTAAGAAT TGTCAGCTGA TGCCTACTTT CAAAATTGT TGGAAGGAGG	2220
GCAGCTTGCT TCACAGCCAA CCTTATCCCG TTTTCTTTCC AGAACTGACG AGGAAACAGT	2280
CCATAGTTTG CGATGCCTCA ACCTTGAATT GGTCAATTC TTTTACAGT TTCACAGCT	2340

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AAACCAACTC ATTGTAGATA ACGATTCTAC CCATTTTACACA ACTTATGGCA AGC

2393

(2) INFORMATION FOR SEQ ID NO: 91:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 4762 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 91:

TTTGTATCTT TTTAGGTCTC TTTCAATCCA AACCCTTTAA ACTATACGTC ATTTCCGGTTC	60
CTGCAAGTCT TGTGGTAATT TTAGGTTTGA TTTTACTTTT CTTTTCACAA GAGCCTCTGC	120
ACGCTTCTTA TTTGATGGTC GTCTTCCCTG TTTTCCTACT TTTATTGGTA ACCAATATTA	180
AGAGTCAACA GAGGGGGCGT AGTGCTAGAA GAAGCCGAAG AGAAACGCCA TTATGCCTAT	240
GGAGTCGTTT CTTCAAAGGA AATCTATATC TGCTAGTTTT TGGGTTTGTC TATCTTTTGT	300
CTGTTCCTTT TTTGATGAAG TTTGTCCTTT ATCCAGTACC TTATCAAGAA CGTAATCGTC	360
TTGCTGATTT GGTAAGAG GAGACAAATA CGGAAGATGC TATCTCATGC ATGGGATGAT	420
ACTGCGACTC TTTATCGTAA GAGTGAGCGC TTGTCCCATC GGCGATTTTG TCCCCGTTGC	480
ACTATACAGC AACTGAGGAA AATCGTAATA AGTTACTTAA TGACTTGAAA GAAAAACAAC	540
CTAAGGTGAT TGTGGTAAAT GATAAGGTGG TAGTCTGGTC TGAAGTGGAA ACACTCTTAA	600
AAGAAAATTA CCAACAAGTA AAGACTGATT ACTCAGAGTT TAAAGTCTAT AAAATTAAAT	660
AACCAATCA ATATCTTGTG TATTTTAAAA AATTTTAGGA TTTTAAACAC AAGATATTGA	720
TTTTTCTTTT TAGAGTGGTA TAATACTTTT TAGAAAGAAC ATTTTAGAAA AGAGCATGCA	780
TATGATTGCA CTAGAAGAAA AAATTACAAT TTTGCCAACT CTCTTCGTCG AGAAACGAGA	840
TGGGAGACGT GTTGATTTTG ATGTGGACAA GATTGACAAG GCTCTCCACA AGGCGGCTGA	900
CAAGGTTATG GATGTGACAC CCCTGGTTGA AAAATGCCTC AATGATCTGA CTGAGCGAAT	960
TATTACAGAA ATTCATAGTC GCTTTCCACA GGAATTAAG ATTTACGAAA TTCAAAATAT	1020
CGTAGAACAT GAACTCCTTG AAGCCAAAGA ATATGCGCTG GCTGAGGAGT ATATTACTTA	1080
TCGGACACAG AGGGATTTTG AGCGCTCAAA AGCGACGGAT ATCAACTTTA GTATTCATAA	1140
ACTTCTCAAC AAAGACCAGA CAGTTGTCAA TGAAAACGCT AATAAGACA GTGATGTCTT	1200
TAACACTCAG CGTGATTTGA CAGCAGGGAT TGTGGGAAA TCAATCGGAC TGCAAATGCT	1260
TCCTAAGCAC GTAGCCAATG CCCACCAAAA GGGGATATC CACTATCACG ATTTGGACTA	1320
CAGTCCCTAT ACCCCTATGA CCAACTGCTG TTTGATTGAT TTTAAGGGTA TGTTGGAAAA	1380

717

TGGTTTAAAG ATTGGAAATG CAGAGGTAGA GAGTCCCAAG TCTATCCAGA CTGCGACAGC	1440
ACAGATTTCT CAAATCATTG CCAACGTTGC TTCTAGCCAG TACGGTGGCT GTTCAGCTGA	1500
CCGTATCGAT GAAATTTTGG CGCCTTATGC AGAGAAGAAT TATCAAAAAC ATCTCAAAGA	1560
TGCAGAAGAG TGGGTATTGC CTGAAAAACA GGAAGATTAC GCTTGGAAGA AAGCGCAAAA	1620
GGACATCTAC GATGCCATGC AATCTCTTGA GTATGAAATC AATACTCTCT TCACTTCAAA	1680
TGGACAAACA CCTTTTACTT CGTTAGGTTT TGGTCTGGGA ACCAGTCGTT TTGAACGAGA	1740
AATTCAAAAA GCTATTTTAA ACATTTCGCAT CAAGGGTCTT GGTTCAGAAC ACCGTACGGC	1800
TATCTTTTCT AAACCTATCT TTACGCTTAA AAGAGGCCTC AACTTAGAGG AAGGAACTCC	1860
CAACTATGAC ATCAAGCAGT TGGCTCTAGA GTGTGCAACC AAGCGGATGT ATCCAGACGT	1920
CTTGCTTAT GATAAGATTG TTGATTGAC AGGTCTTTTC AAGGTGCCTA TGGGCTGCCG	1980
TTCTTTCTCT CAAGGGTGGA AGGATGAAAA TGGTGTAGAA GTCAATTCAG GTCGCATGAA	2040
TCTGGGTGTT GTGACGGTTA ATCTGCCTCG TATTGCTCTT GAGTCTGAAG GTGATATGAA	2100
TAAGTTCTGG GAAATCTTCA ACGAGCGAAT GAATATCGCA GAAGATGCTC TTGTTTACCG	2160
TGTCGAACGC ACTAAAGAGG CGACACCAGC GAATGCTCCT ATTCTTTATC AGTACGGTGC	2220
TTTGTGGCCAT CGTCTAGGTA AAGAAGAAAG TGTGACCAG CTCTTTAAGA ATCGTCGTGC	2280
GACCGTTTCG CTGGGCTATA TCGGCTTGTA TGAAGTAGCG ACAGTTTCTT TTGGTAACAG	2340
CTGGGAAAGT AATCCAGATG CTAAGGAATT CACGCTAGAC ATCATTACAG ATATGAAACG	2400
CCGTGTAGAA GAGTGGTCAG ACCAATATGG CTACCATTTT TCTATCTACT CAACACCATC	2460
CGAAAGTCTG ACAGACCGTT TCTGCCGACT AGATATAGAC AAGTTTGGCT CTATTCCTGA	2520
TATCACAGAC AAGGAATACT ACACCAACTC TTCCACTAC GATGTTGTA AAAATCCAAC	2580
ACCGTTTGAA AAATTGGACT TTGAGAAAGT CTATCCGAA GCAGGTGCGT CAGGTGGTTT	2640
CATCCATTAT TGTGAGTATC CAGTCCTTCA GCAAAATCCA AAGGCCTTGG AAGCTGTCTG	2700
GGATTATGCT TATGACCGTG TAGGCTATCT AGGCACCAAT ACTCCGATTG ACCGTTGCTA	2760
CAAGTGTGAC TTTGAAGGGG ATTTTGAACC AACTGAGAGA GGGTTTGCTT GTCCAAACTG	2820
TGGCAATAGC GACCCTAAAA CAGTAGATGT GGTGAAACGA ACTTGTGGCT ACCTAGGTAA	2880
TCCTCAAGCA AGACCGATGG TCAACGGGCG TCACAAGGAA ATCGCTGCGC GTGTCAAACA	2940
TATGAATGGT TCAACGATTA AAATAGCTGG GCATCAAGTA ACAAATTAGA AAGAAATGAA	3000
ATGGGAAAAT ATCAACTAGA CGATAAGGGG CGCGCACAAG TGACCCGTTA TCACGAGAAA	3060
CACTCTAAAG GTGGAGCTGG TAAGAAAGAA CGCTTGCTTA GCTTCAGAGA ACAATTTTAA	3120

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AACAAGAACA AGAAAAAATA AAAGTGAGAG CCAGCTCTCG CTTTCTCAT AGTGGGAGGT	3180
AAGGATGGAA TTACGCAGAC CAAGATTAGC GGATAAGAAA GCTGTTTTAG ATATGATGAC	3240
AGAGTTTGAA AAATTTCACT CGCCTCACGA CGGCGGTTTC TGGGATACAG AGAACTTTGT	3300
GTATGAAGAC TGGTTAGAAA GCAATCAGGA ACAGGAAATG GGGATTAATC TGCCTGAAGG	3360
ATGGGTTTCT GCAATTCAGT TAGTGGCTTT TTCTGAGAAA GGTCAAGCAG TTGGATTTCT	3420
TAATCTCCGG TTGCGCCTCA GTAACTTTCT ACTAGAAGAA GGTGGCCACA TTGGCTACTC	3480
CATTCGTCCA TCTGAAAGAG GCAAGGGTTA TGCAAAAGAG ACTCTCCGTC AGGGCTTGCA	3540
AGTTGCTAAG GAAAAGAACA TCAAGAAAGC TCTGGTGACC TGTAGTGTGA ATAATCCTGC	3600
TAGCAGAGCA GTCATTCTAG CAAATGGTGG AATATTTGAG GATGCTCGCA ATGGAGTCGA	3660
GCGTTATTGG ATAGAGGTAG CGAATGAATA ATCCAAAACC ACAAGAATGG AAAAGCGAGG	3720
AAGTTAGTCA AGGTCGTATC ATTGACTACA AGGCCTTTAA CTTTGTGGAC GGCGAAGGCG	3780
TGCGCAACTC TCTCTATGTA TCAGGCTGTA TGTTCCTGCG CGAGGGATGT TATAATGTTG	3840
CGACTTGGTC TTTTAATGCT GGCATTCCCT ATACAGCAGA ATTAGAAGAG CAGATTATGG	3900
CAGACCTTGC CCAACCCTAT GTTCAAGGCT TGACTTTGCT GGGAGGGGAG CCTTTTCTCA	3960
ATACTGGGAT TCTCTTGCCA CTTGTTAAGC GGATTCGGAA GGAATTGCCA GACAAGGACA	4020
TCTGGTCCTG GACCGGCTAC ACTTGGGAAG AAATGATGTT GGAAACTCCA GATAAACTGG	4080
AATTCTTGTC ACTGATTGAC ATTCTTGTCG ATGGAAGATA TGATCGAACT AAGAGAAATC	4140
TTATGCTCCA GTTTCGAGGT TCATCTAACC AACGAATTAT CGATGTGCAA AAATCGCTCA	4200
AAAGTGGGCA AGTAGTGATT TGGGACAAGC TCAATGACGG AAAAGAAAGC TATGAACAGG	4260
TGAAGAGAGA ATGAAGAAAA AGGACTTAGT AGACCAACTA GTCTCAGAGA TCGAGACGGG	4320
GAAAGTCAGG AACTGGGAA TATACGGTCA TGGAGCTTCA GGTAAATCAA CCTTTGCACA	4380
GGAATGTGAC CAAGCTTTAG ATTCTACTAC AGTAAATTTG CTAGAGACAG ATCCTTATAT	4440
CACCTCAGGA CGCCATCTGG TAGTACCCAA GGACGCGCCG AATCAAAAGG TGACAGCCAG	4500
TCTGCCAGTG GCGCATGAAC TGGAGAGTTT GCAGAGAGAT ATCCTTGCTT GCAGGCGGGT	4560
ATGGATGTCT TGACAATTGA AGAACCTTGG AAGGCTAGTG AGGTCTTGTC TGGAGCCAAA	4620
CCAATTTTGA TTGTCGAAGG GATGTCTGTT GGCTTTCTAC CCAAGGAAGT CTTTGAAAAA	4680
ACCATCTGTT TCTACACGGA TGAGGAGACC GAATTAAAGC GACGCCTTGC TAGAGATACG	4740
ACTGTGAGAA ATCGCGATGC GG	4762

(2) INFORMATION FOR SEQ ID NO: 92:

(i) SEQUENCE CHARACTERISTICS:

719

(A) LENGTH: 3832 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 92:

GATGCAGGTT TCGACCCACA TATCCAGAA AATTACTTTA AAGATGATGA TGTTAATCAG	60
GTACCTTGTC TTTGTGGTC TTCATCTGCA GCCCTCTTT TCAGTAATTG GGTAGACCAT	120
GCGGTCTATC AGGAGACGCC TTTTGATTGG AGAAAGATAG AAGATGATGC ATCTGCATAT	180
GGGTATTTAT AAGAGGAATT ATGACATATT TAGACGCTTT TAAATCAGGT ACCTTGGTTT	240
TACCGAGTGC CCTGCTCTTG CATTTTAAGG AACTCTTTCC TTCTAGCGAC GATTTTCTGG	300
TTTGGCAATT TTTCTATTTG CAAAATACGA CAGGCTTAGA AGAAATGTCG CCAAGCCAGA	360
TTGCTGAAAG GATTGGCAAG GAAATTCGG ATGTCAACCA GTCCATTTCT AATCTGACGG	420
AAAGGGGACT GCTCCAGTAT CGTACTATCG AATTAAATGG CGAAATTGAA TTGCTCTTTG	480
ATGCTAGTTT GGCCTTGGA CGTTTGGATG ACCTGTTTGG AGCAGTTCAT TCAAGTTCAG	540
ACCAGCTAAC ACCTCAAAAC CAGCTCAAGG ATTTGGTGGA AACCTTCCAG CAGGAGTTGG	600
GACGATTGTT GACGCCTTTT GAGATTGAGG ATTTGACCAA GACACTAAAG GAAGATGGAA	660
CCAGTGCTGA CTTGATTAAG GAGGCTCTTC GTGAAGCTGT TTTGAATGGA AAACCAAAC	720
GGAAGTACAT TCAGGCGATT TTGAGAACT GCGCCATGA AGGAATCAAG AGTGTGGCTC	780
AAATTGAGGC CAAGAGAGCA GAAAGAGAAG CAAGCAATCC TCAGTTGACA CAGGTATCTG	840
CAGATTTTCT AAATGCCATG GATCTCTGGA AGGATTAATC CATGCAAGTA GGCTTGAAAT	900
CCGAGTAAGA TTTGCAAGCT GTGTATAATT GTGATAGAAT AAATAGAAAA TAAATTGAAA	960
AAAGAGGTAT GTGAAATGTC ACGTAAACCA TTTATCGCTG GTAAGTGGAA AATGAACAAA	1020
AATCCAGAAG AAGCTAAAGC ATTCGTTGAA GCAGTTGCAT CAAACTTCC TTCATCAGAT	1080
CTTGTTGAAG CAGGTATCGC TGCTCCAGCT CTTGATTTGA CAACTGTTCT TGCTGTTGCA	1140
AAAGGCTCAA ACCTTAAAGT TGCTGCTCAA AACTGCTACT TTGAAAATGC AGGTGCTTTC	1200
ACTGGTGAAA CTAGCCACA AGTTTGGAAA GAAATCGGTA CTGACTACGT TGTATCGGT	1260
CACTCAGAAC GCCGTGACTA CTTCCATGAA ACTGATGAAG ATATCAACAA AAAAGCAAAA	1320
GCAATCTTTG CGAACGGTAT GCTTCCAATC ATCTGTTGTG GTGAATCACT TGAAACTTAC	1380
GAAGCTGGTA AAGCTGCTGA ATTCGTAGGT GCTCAAGTAT CTGCTGCATT GGCTGGATTG	1440
ACTGCTGAAC AAGTTGCTGC CTCAGTTATC GCTTATGAGC CAATCTGGGC TATCGGTACT	1500

720

GGTAAATCAG CTTACAAGA CGATGCACAA AAAATGTGTA AAGTTGTTCG TGACGTTGTA	1560
GCTGCTGACT TTGGTCAAGA AGTCGCAGAC AAAGTTCGTG TTCAATACGG TGGTTCTGTT	1620
AAACCTGAAA ATGTTGCTTC ATACATGGCT TGCCCAGACG TTGACGGTGC CCTTGTAGGT	1680
GGTGCGTCAC TTGAAGCTGA AAGCTTCTTG GCTTTGCTTG ACTTTGTAAA ATAATCAGTA	1740
AGTAGCAAAA GCTAGGTGGA ACAGCATTCA GATGTCTGTT ACATTTTSTA TAGGAGAGAA	1800
AGATTGAAAA CAAAAATTGG ATTAGCAAGT ATCTGTTTAC TAGGCTTGGC AACTAGTCAT	1860
GTCGCTGCAA ATGAAACTGA AGTAGCAAAA ACTTCGCAGG ATACAACGAC AGCTTCAAGT	1920
AGTTCAGAGC AAAATCAGTC TTCTAATAAA ACGCAAACGA GCGCAGAAGT ACAGACTAAT	1980
GCTGCTGCCC ACTGGGATGG GGATTATTAT GTAAAGGATG ATGGTTCTAA AGCTCAAAGT	2040
GAATGGATTT TTGACAACTA CTATAAGGCT TGGTTTTATA TTAATTCAGA TGGTCGTTAC	2100
TCGCAGAAATG AATGGCATGG AAATTACTAC CTGAAATCAG GTGGATATAT GGGCCAAAAC	2160
GAGTGGATCT ATGACAGTAA TTACAAGAGT TGGTTTTATC TCAAGTCAGA TGGGGCTTAT	2220
GCTCATCAAG AATGGCAATT GATTGGAAAT AAGTGGTACT ACTTCAAGAA GTGGGGTTAC	2280
ATGGCTAAAA GCCAATGGCA AGGAAGTTAT TTCTTGAATG GTCAAGGAGC TATGATGCAA	2340
AATGAATGGC TCTATGATCC AGCCTATTCT GCTTATTTTT ATCTAAAATC CGATGGAAC	2400
TATGCTAACC AAGAGTGGCA AAAAGTGGGC GGCAATGGT ACTATTTCAA GAAGTGGGGC	2460
TATATGGCTC GGAATGAGTG GCAAGGCAAC TACTATTTGA CTGGAAGTGG TGCCATGGCG	2520
ACTGACGAAG TGATTATGGA TGGTACTCGC TATATCTTTG CGGCCTCTGG TGAGCTCAAA	2580
GAAAAAAAAG ATTTGAATGT CGGCTGGGTT CACAGAGATG GTAAGCGCTA TTTCTTTAAT	2640
AATAGAGAAG AACAAGTGGG AACCGAACAT GCTAAGAAAG TCATTGATAT TAGTGAGCAC	2700
AATGGTCGTA TCAATGATTG GAAAAAGGTT ATTGATGAGA ACGAAGTGA TGGTGTCTAT	2760
GTTCGTCTAG GTTATAGCGG TAAAGAAGAC AAGGAATTGG CGCATAACAT TAAGGAGTTA	2820
AACCGTCTGG GAATTCCTTA TGGTGTCTAT CTCTATACCT ATGCTGAAAA TGAGACCGAT	2880
GCTGAGAGTG ACGCTAAACA GACCATTGAA CTTATAAAGA AATACAATAT GAACCTGTCT	2940
TACCCATCTCT ATTATGATGT TGAGAATTGG GAATATGTAA ATAAGAGCAA GAGAGCTCCA	3000
AGTGATACAG GCACTTGGGT TAAAATCATC AACAGTACA TGGACACGAT GAAGCAGGCG	3060
GGTTATCAAA ATGTGTATGT CTATAGCTAT CGTAGTTTAT TACAGACGCG TTAAAAACAC	3120
CCAGATATTT TAAAACATGT AAACCTGGTA GCGGCCTATA CGAATGCTTT AGAATGGGAA	3180
AACCCCTATT ATTCAGGAAA AAAAGGTTGG CAATATACCT CTTCTGAATA CATGAAAGGA	3240
ATCCAAGGGC GCGTAGATGT CAGCGTTTGG TATTAAGCGA TGATTTGAAA GAGGGATGTG	3300

721

ATAGTAGCAC CCTCTTTTTC TTTGTTTTAT GATAGTTCAT CCTCGAGTAA ATTCAAGTTC	3360
TTGCTCGGAA ATGAAGCTTA TATAGTAGAT TGAATATAGA CAAATACCTT GTGATTGGTA	3420
AAACATTTTA GAAATTCATT TACCTTTCCT AATCGACTTG GTTTCATCTT ATTTCAATCT	3480
ATTATAGTAT TGGGGAATTT CTTCAAACCA CATCAGCTTG GTCAGTTCTA CCTGCGACCT	3540
CAAACTTGT GCTTTGGTCA AGCTGGGTTT AGTTTCCTAG TTTGCTGATG GATTTCCATT	3600
GACTATAAGC ATCCAACCCT CTTTTGTCT TCTAAAGAAT TCTTAAATTA TCAGTCTATT	3660
GCAACTTTTC TCATATAAGT TCTTTGTCTT GCTATTGGTT TTCCTTAGTA GTATACTAAG	3720
GTAGTAATCA TTAAGAAGTG GTTACAAAA ATAATGAATG AGGTAAAGAA AATGGTAGAA	3780
TTGAAAAAAG AAGCAATAAA AGACGTAACA TCATTGACAA AAGCAGCGCC GG	3832

(2) INFORMATION FOR SEQ ID NO: 93:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10690 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 93:

TGAAAAAATC CTCATGAACC TGGCGCCAAT AGACAAGTGT CTTGTTTCCC TCACCTTCCT	60
TATAGGCATG GTCAGCTGAC ACTCGATTGA AGGGTTTAAC AGAAACCTTT GTAATTTCGA	120
CAATGCAGAC AGCCTGATTT TGAATATCTA AAATGACATC GAAGGTCCCT ACTTGGGGAA	180
GTGGTTCGTC TTCTAGCACA TAGAGGTCAT AGGCTGATGC TGTGCTGTC TTTTCTCCTT	240
TAAACACCAA ATCCGCTAAA AGGTCTGGTT CAACTCCAAA AGCCCAGGCA TCGATTTTCAT	300
CTCCGATCAA AGGATTGATT TGCTTGATTT TATTCCACAT TTCTTGCGGT ATCATGGGTG	360
CTCCTTTGTA ATTTTTTACT TTCTTCTTTT ATGTGTTTAA GATGATCTGG ATGGTCAATC	420
TCTAAATCAA AAATCTCTGG AATAGAACTG TAGTGGATAA TGCACTTGAT ACCCAACTGA	480
TTCATTTTTT GTATGAAAGA AGTATTCAGA TAGCCTGCTA CAGCAAAATC AATCTTGTTT	540
TTTCTTGCTT TATCCTGCAT ATCTCTTAGC ATATCTAACA TTATTGGACT TTCCATATCA	600
TGCCATTGAC TGTTTCTCAT AGTCGCAAAA ACAAAGGAAG TCAAATCATT CATTCCTAAT	660
ACAATCTTTG AAATGCCCCG TTCCAGTATA CTAATAAGT CAAAATACGC TGACGGTAAT	720
TCAATCATCG TTCCGACTTT CCCAGTAAAA CCCTGCTGAC GCAATACTGT AATAGCTTGT	780
TTTAATTGGT CGGCATCATT GACAAAAGGA AAGATAACAG ATAGATTGGG GTTGGTTTGA	840

722

TAAACTTCTG TAACGACATG TGCTTCAGCC TGAAATTCAT CCAAACACGC CAGTAAACGC	900
CTAGTTCCTC TATAGCCAAA CAAGGGATGC CCTTCGTCAA AAAACTCTTT AGTCCCCACT	960
AAACAATTGG CTTCTGTATT CGTTAATTCA GTAAAACGAT ACCAAACTTC CTTACCTAAG	1020
TAAAAGGAGC AAATAGTATC AAGATAATCT TTCACAAATT CCTGACAACT TTGTAATAGT	1080
ATATTTTGAT TGAGCTCTCT CAATAAGTAT TCCCCACGAA TCATGCCGAC GTGGTGAAAT	1140
AGTTGAGGAT AAATTTTTC AAGAATTTT TCGCCACTAA GGGCAAGTTG ATTTCTCATC	1200
ATTCACCTTC CAATTCATGT AAGAAGTCTT GTCCAGTTCT GGAAATCCTA ATAATTCAGA	1260
CTTAACCTTC AAGACTAATG GCGATGCATT TTCTTCTGTA ATCTCTTGAA TATCCATCCA	1320
AATATATCCA AGTGAATCAT TCGCACCATC AGACACAGCT TCCGAAATCG TAACTTGAGG	1380
TGCACTCTCA TTCATTTCAA CATCATACAA GGCTATGACA TGGTGAACCA TAAAATTTT	1440
TAACTCTTCC CTGACGAAAA CATCGTAGAT TCGAGGATTA GAGTAGCTTC TAACAGTAAA	1500
TCCCGTCTCT TCCATAACTT CTCTAGTCAG CGTTTCCGTC AGTCCTTCAC CAAGTTGCTG	1560
ACTGCCTCCA GGTAGATCAT ACCGATGTTG ATAAGGGCCT CTCGTTTTTT CAATGCAAAG	1620
TAACTTTCCA TTTTCAAAGC AAACACAGTA GACCCCAAAG TGATTTTGA TTTCCATCCA	1680
ACTCCTCCTA CTTCAAAGAC CAGCCACCAT CTATTGTCAA GATTGTCTCT TGCATGGCGC	1740
TCGCTTTTCC ACTTGCTAAA AAAAGACTAA GCTCTGCTAT TTCCTCTGGC TCAATCCAGC	1800
GCTTGATTGG GGTTCACATA GCCACCCAGT CAGCCAAACC ACCTGGTTCA AAATCCGCAG	1860
CGGTCATAGC TGTCTTGACT GCTCCTGGAG CGATACCAA GACCTGAATC CCAGCTTCAG	1920
CATAGTCTAG AGCCAACTGC TTGGTGAAGC CAGCCAAGGC ATGCTTGGAT GAAGTATAGG	1980
CGTGACCACC TCCACCTGCT AGGCTAGAAG CAATGGAACA CATATTGATG ATGATTCCTT	2040
TTTTATTTTC CAGCATTTGT GTCAAATAAT ACCGAGTCAA CTCTACTGGA ATAATGTAGT	2100
TGATTTCAAA AATCTCTGA ATGTCCTGCG CCGTTTGTTC CAACAGTGGT TTGTAATCAT	2160
CCAAAACCTC AGCAGTATTA CACAAAACAT CCACCTGAGG GCACCACTCA AAAATAGGTT	2220
CCAAGTCCAA GGTCAAATCT CTCTGTAAAA AGCGAAAATC ACCCTCTAAG AGTGGCTTTT	2280
CACCTTGGTC AACTCCATAA ACTTGATAGC CCTTCTCTAA AAAGAGGCGA GCTTGAGCCA	2340
ATCCGATCCC TGAACCTCACT CCTGTAATGA GTACACGTTT AGTCATGCAC TTCTACCCAA	2400
TCCGTTGCCA AAACATCACA AACTGTCGGG CTCCACATGG AAAAACCTTC TCCTTCGCCA	2460
GAAACGTTGA TTAGGAAATA AGGTGTCATT TCAAGTGCAA GCCCATTTTG CTCGATGGTA	2520
TCAAAGAGTT GGACATAGTT TTCCGCACCT CCCCAACCAG TTCGTACATA TTTTCTCTTA	2580
GCCTTTAACC CAGGCAGGAT CTCTTCAAAT GTCATGTTT TCTCCTTTAA TTCTACATTC	2640

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TTCATTTAAT TATAGCAAAA AACCGCTTTA TACGGCTTTT TGAATGTGAG TTATTCAAAC	2700
CTGCTACTAC TTACGGCAAA TTATTCCTG CAGCAAGATA AATTCATAC CATTCTTTTC	2760
TTGTTAAGCT AAAGTTTGCC GCTCGGCTAA CTCTCTCAA GTGCTTAGGA TTTGTTGTAC	2820
CTACGACTGC CTGCATTTT GCTGGATAAC GCAATATCCA AGAAATGGCA ATAGTTGAAG	2880
AGGT'TACTCC ATATTTAATA GCTAAACGAT CAAGTACTTG ATTTAAAGCT TGAAATTTCT	2940
CATT'TCCAAC AAAATTCCTT TTAAATACC CGAATTGTAA GACAGACCAT GCTTGAATGA	3000
CCACATCGTG TAATTGGCAA TATTCAAAAA TGCTGCCATC TCGCATAGCT GCTTGACTAT	3060
CTTCCATATT AACATGAAAA GCTGATTCAA ATCCTGGAGT AAAAGCCGCA CTCAATTGTA	3120
GCTGATTAAC AGCTAACGGC TGCTTGACAT CTTTTTTAAG CAACTCCATC ATCATAGGAT	3180
TTTGATTAGA AACTCCAAAA TCTCGAAGTT TACCTTGTTT ATAAAGGAGA TTAAAGGCTT	3240
CTGCTACTTG GTCAGATTCC ATCAAAGCAT CTGGTCGATG AAGGAGCAAG CTATCTAGAT	3300
GATCAATCTT CAATCTTTGC AAAATACCGT CTAAGTATT TATAATATAG TCCTTAGAAA	3360
AATCAAAATA GGTAAATCTT TCAATGCGAA TGCCACATTT GGAAGTGAATC CACATCTTTT	3420
CTCTTAAATC TGGACGATTT TTTAGGACAA GACCTAACAG TTCTTCACAA CGACCACGAC	3480
CATAAATATC AGCCAAGTCG AAGGCATTGA TTCCAACAGA AAGTGCTGTT TCTACAAGCT	3540
CTTCAACTTC TTTTACAGAT TTATCTTTTA TTCTCATCAT TCCGAGAACA ATTTCTGATA	3600
ATTCTTTGTC ATCTTGACCA AGAGTTATGT ATCTCATCAA ATTTTCTCTC TTTAATTTCT	3660
AACAT'TCTC CCTTCATTAT AACAAAAAAC CGCTTTGCAA CGACTTTTTC ACTATACTTC	3720
ACTCCATTTT ATCTTCTTAA ACCCACGGAA CAAGACAAAG ATTCCAATAA AGAGGACAGC	3780
TAAAGGAATA ACTTTTGTA GGAACACATT TGAAATTTCC ATCCACTCAT AATAACGGAG	3840
CAGAGAACCC ACCACAAGAT GGGCAATAAT CATACTGACA AATGGACGAA AGACCGCTTC	3900
TTTCCAATTC CAAATACCGA TAACTAGCGA AATCGTAAAG ACAGACAAAC TATCCCAGGG	3960
AGCCGGAATA TAAAAGGCTC CTCTTTGTAT GAAGCTTGCC ATTCCTACAT ATCCTAAAAC	4020
AACTAGAAGA ACTATAGTCC CAACAACAAT GTAAGTGCCA ATTTTCATTT TAGGAGAATC	4080
TTGGACTAAA CTCTTCGTA AAATTGTGGC CACAAGTCCA AATCCAATCA GAAAAATAAG	4140
AAGTTGCCCT AAAAATGTGA GCAAATTGAC TGTTAAGAGA GGACCTTTAG AAAAATCACT	4200
TAGTAGTTGA TAATAACGTA ATACCGCCAG GACAAGAATT GCGTCAAAA GGGACTCTTT	4260
GATAGAACTG CGAGGTGCTC CCTTGAGAAT CTCTTTCATT ATTTTTTTAG GATTCTTACC	4320
TAGATAATCC TCTGCACTCA TGCCATCTCG TTCTGCTTCT GAGAAATCTA GCATCATCAA	4380

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ATAGATCTGC TCTCTGAGAT AGTCTTCATC ATAGAGAAAT CCAGCAAGAT TAAAACTTTC	4440
CCACAACCTCC TCAAAATACT TTTGATTCTC CTCAGAAAAC TCATGTAGCA AAGCGCTTGT	4500
TTCTTCGTAA TACTTCATTT TCTTCATGGT TTAACCCCA TTCTTAATCC CTTCTACTTT	4560
TTGACTCAAA TCGTCCCATT GTTGCCAAAA GACTGAGACA CGCTCTTCTC CTTCTTTTCAT	4620
TAATGAAAA TACTTCCGAT CTGGACCATC TGGCGACGGG CGCATGTGCG CTCTTATCCA	4680
TTGATTTTT TCTAACTTTT GCAACAAAGG ATAAATAGTT CCTGGAACGA TAGTATCAAA	4740
TCCAGCCTCT CGCAAAGTCT GAACCAACTC ATAACCATAC CGCTCTTTTT GACCAATCAT	4800
ATCCAAGACA CAACCTTCAA GAACACCTTT TAATAGCTGA GTTCTTTTCA TCACTTCTCC	4860
CTTCTAATCT ATTTGTAAAT ACCTACTAGT GACTTCACCT ATAGTATATC ACTTCTACAC	4920
TAGTTTGTA AGCATAATAG TTAATACTCT TCGAAAATCT CTTCAAACCA CGTCAGCGTC	4980
GCCCTACCGT ATGTATGGT ACTGACTTCG TCAGTTTCAT CTACAACCTC AAAACATGT	5040
TTTGAGCTGA CTTGTCAGT TTCATCTACA ACCTCAAAAC AGTGTTTTGA GCTGACTTCG	5100
TCAGTTTCAT CTACAACCTC AAAACAGTGT TTTGAGCTGA CTTGTCAGT TTCATCTACA	5160
ACCTCAAAAA CATGTTTTGA GCTGACTTCG TCAGTTTCGT CTACAACCTC AAAACAGTGT	5220
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TGGTTTATTG CTTCCATTT GTTCCTTGAT ATAGGCGATT TCTTCTTCCA TATTTAGACG	5760
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CAAGTTTCA AGACTAGAAA CTTCTTCCAA ACCAAGTTGA GTCAAACTG CACGACTAGT	5880
TTCCATCATA AATGGTTCAA TCAAGTGAGC AACTACACGA ATGCTGGCTG CCAAGTGGCT	5940
CATGACACTT GCCAATTGGT CACGAAGAGC TTCATCCTTG GCCAAGACCC ATGGTGCGGT	6000
CTCATCGATG TATTTATTGG TACGAGAGAT CAGAGTCCAG ACTGCTTCAA GCGCACGTGG	6060
ATAGTCAACT GCTTCCATGT GTGTATGGAA GTCTGCGATT GATTGTWCTG CAACCTCAGC	6120
AAGAACATGA TCATATTCAG TCACACCTTC TACATAGGCA GGGATTTGTC CATCAAAGTA	6180

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CTTATTAATC ATGGAAACCG TACGGTTAAG GAGGTTCCCA AGGTCATTAG CCAATTCATA	6240
GTTGATACGG CCGACATAGT CTTCAAGAGT AAAGGTTCCG TCTGAACCAA CTGGAAGGTT	6300
ACGCATGAGG TAGTAACGAA GTGGATCTAG TCCATAACGC TCTACCAACA TTTCAGGGTA	6360
AACGACATTC CCTTTTGA CT TAGACATTTT TCCGTCTTTC ATGACAAACC AACCATGGGC	6420
AATCAAACGA TCAGGTAATT TAACATCCAA CATCATAAGA AGGATTGGCC AGTAGATAGA	6480
GTGGAAGCGA AGGATATCTT TTCCTACCAT ATGGAAGACT GTTCATTCC AGAACTTGTC	6540
AAAGTTACCA TGTTCGTCTT GAGCGTAGCC AAGAGCTGTC GCATAGTTAA GAAGGGCATC	6600
AATCCAAACG TAGACAACGT GTTTTGGATT TGATGGGACA GGCCTCCCC ATGTAAAGGT	6660
TGTACGAGAT ACCGCCAAAT CTTCCAAGCC TGGCTCGATG AAGTTGCGTA GCATTTTCATT	6720
AAGGCGACCA TCTGGCGTGA TAAATTCAGG ATGAGCTTTG AAAAATTCGA CCAAACGGTC	6780
TTGGTATTTG CTAAGGCGAA GGAAGTATGA TTCTTCAGAA ACCCATTCAA CCTCATGACC	6840
TGATGGAGCA ATACCACCAG TCACATTTCC AGCTTCATCA CGGAAAAC TT CTGCCAGCTG	6900
GCTTCTGTGA AAGAATTCCT CGTCTGATAC TGAATACCAA CCAGAGTATT CACCCAAGTA	6960
GATATCATCT TGAGCAAGTA AGCGTTCAAA GACTTGTGCG ACAACTTTTT CATGGTAGTC	7020
ATCAGTTGTA CGGATAAATT TATCGTATGA GATATCTAGT AATTGCCAGA GTTCTTTAAC	7080
TCCAACCGCC ATTCCATCAA CATAGGCTTG AGGTGTAATA CCAGCTTCTT CCGCTTCTG	7140
CTGGATTTTC TGACCATGTT CATCAAGACC TGTCAGATAA AATACATCGT AGCCCATCAG	7200
GCGTTTGTA CGTGCTAGGA CATCATGTC GATAGTTGTG TAGGCAGAAC CGATATGAAG	7260
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TCCTTTCCAG GCAAATGAAA CCTGTTTTTC TAACACTTCA TTATATCACA TTTTAAATGA	7380
ATTTCAATAG GGAAATCCAT ACAAAAACAA GATAGACGAG TGTCCATCTT GTTGATCTCA	7440
TTCATAACGA AGGGCTTCAA TTGGATCAAG TTTTCGATGCC TTGTTGGCTG GCAAGACTCC	7500
AAAAATCATA CCAACACTAG CCGAAACTGC AAGACTAAAT AGGGCGACTG GGATTGATAC	7560
TCCAACCTCT ATACCTTCTA TTAAACCTTG CAGTAACAAA CCTGCTAAG CAGTTAAACC	7620
ACTTGCAATT GTCAAGCCAA TTAAGCCACC TAACAAGGTC AAAATCATGG ATTCAATCAA	7680
AAACTGAATT AAAATATTGG CACGTGTTGC ACCCAAAGCC TTACGAAGAC CAATCTCACG	7740
AGTGCGCTCT GTCACCGAAA CCAGCATGAT GTTCATGACA CCAGTTCCTC CAACAAAGAG	7800
AGAAATCCCT GCGATGGAAC TAATAATCGT CGTCATAAAA CTAAACGATT GTTGAATTTT	7860
TGCAAAATACA ACGGACTCAT CTGCCACCTG GTATTCTCCC TGTGTGAAGC CTGCAAGCTC	7920

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TGTCATTTTT	CGTGCCAGTT	CTGGACCCAG	AGTTGGGGTT	AAACTGGTAT	CATTCACTCG	7980
AAAGACAATA	TTAGCTATTT	CATCTACATT	AAAATTCGCA	GCAAGGGAGA	TATTGGTAGT	8040
AATAGGCAAG	CCACCAAACC	CATATATTTT	TGATCTTTTA	GCCTCCGGAC	TAGTATAAAC	8100
CCCAATGACC	CGGTAACATA	ATCCATTGAC	TTCTACAACC	TTGTTAATAG	CCTCTTGAGG	8160
AGATTCAAAT	AAACTAATGG	ACAATTCCTC	ATCTAGCAAA	ATGACACTTG	CAAACCTCTT	8220
GAAATCTTGC	TCTCTCAGAC	TACGACCTGC	AATAATTTCA	TTCTTAACAG	CGTCCATGTA	8280
AGTTCTGTTT	CCACCTGTCA	AATTAGCATT	CTCAACCTTT	TTATCTTGAT	AGGTCAAGAT	8340
GGCATTTCGT	GAATTGGTTA	CATAGTAACT	ATCCACTCCC	TTCAGTTTAG	CTGCCTCTTG	8400
GACCCAGGAT	TCTTGCGGTT	TTGGCGGTTT	AACAGGAACT	TCCTCTTCCT	TTCCAGAAAC	8460
CGTAAAAGCT	GATTGTTTCT	GAGTAAAAGA	CCCGTCTTTA	CTTTTTTTAG	GAGAGAAAAA	8520
GACGCTAATA	TTTTTCTGAG	ATTTAGTCAT	ATCTTTATTG	ACTTGACGAG	ATAGGGAATC	8580
ACCCAAAGCC	ATAATCACAA	CAACTGATGA	AACACCGATA	ATAATCCCAA	TCATAGTAAG	8640
CAAAGAACGC	ATCTTGTGAG	CCATGATAGA	TGAAAAGGCA	AATTTTCAGAT	TCTGCATCTT	8700
AGTTTTCTCT	CTTTCCTAAC	TGAGCACTGT	CAGACGAAAT	GACCCCATCC	CGAATGACAA	8760
TCTGACGTTT	GGCATAGGCA	GCAATCTCAG	GCTCATGCGT	TACCATGATA	ATGGTTTTC	8820
CTTCTTTATT	CAATCAACC	AATAATTGCA	TAATTTGGTT	ACCTGTTTIG	GTATCCAAGG	8880
CTCCTGTCCG	TTCATCCGCT	AGGATAATAG	AAGGATTGTT	TACCAAGGCA	CGCGCAATGG	8940
CTACACGTTG	CTTTTGACCA	CCAGATAAAT	CTGAAGGTAA	ATGGTGACTA	CGTTCTGTCA	9000
ATTCAACCTT	GTCTAAATAT	TCCTCAGCCA	ACTTGCGACG	TTTTGAAGAC	GAAACTCCTG	9060
CGTAAATCAA	GGGCAATTCT	ACATTTTGCA	GAGCATTGAG	CTTCGATAGA	AGAAAGAACT	9120
GCTGAAAGAC	AAAACCGATT	TGTTGGTTAC	GGACCTTAGC	TAGTTGTTTT	TCACCAAGCC	9180
CAGCCACTTC	TTGACCTTCA	AGATAATATT	CTCCACTGGT	TGGTGTATCC	AACATGCCAA	9240
TCGTATTCAT	CAGAGTGGAC	TTACCAGACC	CAGATGGTCC	CATGATGGCT	ACAAATTCAC	9300
CCTCATTCAC	TTCTAGATTG	ATATTTTTGA	GAACCTGCAG	TTCTTGGTCA	CCATTACGGT	9360
AACTTCTGAA	GATATTTTTT	AGACTAATTA	GTGCTTCAT	CAGCCTTCAC	CTCTTTTCCT	9420
TCTTCCAAGG	AAGATGTTGG	ATTACTGATG	ACCTTAGCAC	CGTTCGTTAA	ACCAGAAGTG	9480
ATTTCTTGAT	TTTCTGCGTC	AGCATTTCCT	AATGAAACCT	CAACTTTTTT	AGCCTTTTGT	9540
TGTTCATCCA	CAATCCAGAC	ATAATTTTGA	CTATCATCCA	TTACTAGACT	GCTAACAGGA	9600
ACAAGAATAG	CCTTAGTTTT	GCTTTTAACC	TCAATGTTGA	CAGAAAAACC	TTGTTTCAAA	9660
TCACCAACCT	CGCCTGTCAC	ATCAATAGTA	TAAGGGTATT	TAGAACCTGT	ATTATTCCTG	9720

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GCTGCTGGAC TAGCTGCTTC ACCATTGTTT TTAGGATAGT CAGAAATATA GCTTAATTTTC	9780
CCAGTCCATT TTTTATCAGG ATACACTTTA GAAGTAAAGC TTACTTCTTG ACCTACAGAA	9840
AGGTTGGCTA GATTGTACTC AGACAATTCT CCCTTGACTT GTAAATTTTC ATTGCTGACA	9900
ATATGAACCA TAACTTGACT CGCCCTGTT GGAGATTAG AACATTGCT ATTGACTTCG	9960
ACCACAGTTC CCTCTAGGGT ACTGAGAACA GTTGTTCAT CCAATTGACT TTGAGCCTTG	10020
CTTAATTGCG CCGCAGCATC TGCACGCGCA TCACGGGCAT CACCCAATTG AGCGTCAATA	10080
GAAGCAACAG AATTTCAGC CACTGGAGTT GGGCTTTGCA CCGTTGCATC TTCTCCTCCT	10140
ACTGGCGCTG GTAACGTGG AGCCGGAGCT GAAGCGGCTT CATTTCGTGC TTGATTGAGT	10200
TCATTGATAT GACGATCTGC CCTAGCTACT GCTCGACTAG CTGAATCATA GGCCGCCTGC	10260
GCTTCTGAAC TACTGTACTT GACTAAAGCC TGCCCTTCGC TGACCTTATC GCCCAGAGAA	10320
ACAAGGATTT CATCTAAATC ACCCTTACTA GCATCAAAAT AACATATTG TTCATTTTTT	10380
GCTGTTACTG TCCCTGACAA TAAAACAGAG GAGGCCACGC TTCCTTCCTT GGCAACAACA	10440
AGATGAGTAG GCTCATCTTT TAGAGCAGTC TGAGAAGGTT GTCTAAAGAG TAAAATCCCC	10500
CCAGCACCCA ATACAACTAC ACTCGCAGCA CCGATTGCTG CATAAGTTG CCACTTTTTA	10560
GCTTTACCAT TCTTTTCTT CATAATGAAA CTCCTTTCT TTTTACAAT ACTTGCTAT	10620
TATACCAAT TTCCCTCCAG CAAACAATAC AGTTCAGGAT TAAACAATCG TTCGGAATTT	10680
TGCTTTTCGG	10690

(2) INFORMATION FOR SEQ ID NO: 94:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 8195 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 94:

GAGAAAGCGC CCACGTTTCC CCGAAGGGAG AAAGGCGGAC AGGTATCCGG TAAGCGGCCA	60
GGGTCGGAAC AGGAGAGCGC AACGAGGGAG CTTCCAGGG GGAAACGCCT GGTATCTTTA	120
TAGTCCTGTC GGGTTTCGCC ACCTCTGACT TGAGCGTCGA TTTTGTGAT GTCGTCAGG	180
GGGGCGGAGC CTATGGAAAA ACGCCAGCAA CGCGGCCTTT TTACGGTTCC TGGCCTTTTG	240
CTGGCCTTTT GCTCACATGT TCTTCTCTGC GTTATCCCCT GATTCTGTGG ATAACCGTAT	300
TACCGCCTTT GAGTGAGCTG ATACCGCTCG CCGCAGCCGA ACGACCGAGC GCAGCGAGTC	360

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AGTGAGCGAG GAAGCGGAAG AGCGCCCAAT ACGCAAACCG CCTCTCCCCG CGCGTTGGCC	420
GATTCATTAA TGCAGCTGGC ACGACAGGTT TCCCGACTGG AAAGCGGGCA GTGAGCGCAA	480
CGCAATTAAT GTGAGTTAGC TCACTCATTA GGCACCCAG GCTTTACACT TTATGCTTCC	540
GGCTCGTATG TTGTGTGGAA TTGTGAGCGG ATAACAATTT CACACAGGAA ACAGCTATGA	600
CaTGATTACG AATTCGAGCT CGGTACCCGG AAAATCCAGA AAATGCTTGA AAAAAATCCT	660
AGAAGATGGT ATAATACTAA ATTGTAAGGG TTATCACATA TAACTCAAAA AAAGAAAGAA	720
CAAAAGGAGA GTCAAACAT GGTCTCTAAA GATTTCCACG TAGTGGCAGA AACAGGTATT	780
CACGCACGTC CAGCAACATT GTTGGTACAA ACTGCTAGCA AATTTGCTTC AGATATCACT	840
CTTGAGTACA AAGGTAAATC AGTTAACCTT AAATCAATTA TGGGTGTTAT GAGTCTTGGT	900
GTTGGCCAAG GTGCTGACGT AACTATCTCA GCTGAAGGTG CAGATGCAGA TGACGCTATC	960
GCTGCAATCT CAGAAACAAT GGAAAAAGAA GGATTGGCAT AAGGGAAATG ACAGAAATGC	1020
TTAAAGGAAT CGCAGCATCT GACGGTGTG CAGTTGCAAA AGCATATCTA CTCGTTTCAGC	1080
CGGATTTGTC ATTTGAGACT ATTACAGTCG AAGATACAAA CGCAGAAGAA GCTCGCCTTG	1140
ATGCCGCTCT ACAGGCATCA CAAGACGAGC TTTCTGTTAT TCGCGAGAAA GCAGTAGGTA	1200
CGCTCGGTGA AGAAGCAGCT CAAGTTTTTG ATGCTCACTT AATGGTTCTT GCTGACCCAG	1260
AAATGATCAG CCAAATCAAG GAACTATCC GTGCGAAGAA AGTGAATGCA GAAGCAGGTC	1320
TGAAAGAAGT TACAGATATG TTTATCACTA TCTTTGAAGG CATGGAAGAC AACCCATACA	1380
TGCAAGAACG CGCAGcGGAT wTCCGCGACG TGACAAAACG TGTATTGGCA AACCTTCTTG	1440
GTAAAAAATT GCCAAACCCA GCTTCTATCA ATGAAGAAGT GATTGTGATT GCGCATGACT	1500
TGACTCCTTC AGATACAGCT CAATTGGACA AAACTTTGT AAAAGCTTTT GTAACCAACA	1560
TTGGTGGACG TACAAGCCAC TCAGCTATCA TGGCAGGTAC ACTTGAAATT GCTGCTGTAT	1620
TAGGTACAAA TAACATCACT GAAATCGTTA AAGACGGTGA CATCCTTGCT GTTAACGGGA	1680
TCACTGGAGA AGTGATTATC AACCCAACAG ATGAACAAGC GGCAGAATTT AAAGCAGCTG	1740
GTGAAGCCTA TGCGAAACAA AAAGCTGAAT GGGCACTTTT GAAAGATGCT CAAACAGTGA	1800
CTGCTGACGG TAAACACTTC GAGTTGGCTG CTAATATCGG TACTCCAAAA GACGTTGAAG	1860
GTGTTAACAA CAACGGTGCA GAAGCTGTTG GACTTTACCG TACAGAGTTC TTGTACATGG	1920
ATTCTCAAGA CTTCCCAACT GAAGATGAGC AGTATGAAGC ATACAAGGCT GTTCTTGAAG	1980
GAATGAACGG TAAACCTGTT GTCGTTGTA CAATGGATAT CGGTGGAGAT AAGGAACTTC	2040
CTTACTTCGA TATGCCTCAC GAAATGAACC CATTCCTTGG ATTCCGTGCT CTTCGTATCT	2100
CTATCTCTGA GACTGGAGAT GCTATGTTCC GCACACAAAT CCGTGCTCTT CTTCGTGCGT	2160

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CAGCGAAAGC AGTCTTTGAT GAAGAAAAAG CAAACCTTCT TGCTGAAGGT GTTGCAGTTG	2280
CGGATAACAT CCAAGTTGGT ATCATGATCG AGATTCCTGC AGCGGCTATG CTTGCAGACC	2340
AATTTGCTAA AGAAGTTGAC TTCTTCTCAA TTGGTACAAA CGACTTGATC CAATATACAA	2400
TGGCAGCAGA CCGTATGAAC GAACAAGTTT CATACCTTTA CCAACCATAC AACCCATCAA	2460
TCCTACGCTT GATTAACAAT GTGATCAAAG CAGCTCACGC TGAAGGTAAA TGGGCTGGTA	2520
TGTGTGGTGA GATGGCTGGT GACCAACAAG CTGTTCCACT TCTTGTCGGA ATGGGCTTGG	2580
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CTGCAATTTA GAAATGAATT GCAACTAGAA ATATCAAATA GAAAGAGAGT TTCGATGAAA	3000
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TACTCATGAA AGATCCAAAC TATAAGCTAA AAGATGAGGA TATTGTTAAT GAGGTCAAGG	3360
GTGGATATGT TATCAAGGTA GATGGAAAAT ACTATGTTTA CCTTAAGGAT GCTGCCACG	3420
CGGATAACGT CCGTACAAAA GAGGAAATCA ATCGACAAAA ACAAGAGCAT AGTCAACATC	3480
GTGAAGGTGG AACTCCAAGA AACGATGGTG CTGTTGCCTT GGCACGTTTC CAAGGACGCT	3540
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CCTATCGCCG ACAAATAGC GATAACACTT CAAGAACAAA CTGGGTACCT TCTGTAAGCA	3780
ATCCAGGAAC TACAAATACT AACACAAGCA ACAACAGCAA CACTAACAGT CAAGCAAGTC	3840
AAAGTAATGA CATTGATAGT CTCTTGAAAC AGCTCTACAA ACTGCCTTTG AGTCAACGAC	3900

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ATGTAGAATC TGATGGCCTT GTCTTTGATC CAGCACAAAT CACAAGTCGA ACAGCTAGAG	3960
GTGTTGCACT GCCACACGGA GATCATTACC ACTTCATCCC TTA CTCTCAA ATGTCTGAAT	4020
TGGAAGAACG AATCGCTCGT ATTATTCCCC TTCGTTATCG TTCAAACCAT TGGGTACCAG	4080
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CTGCACCAAA TCTTAAAATA GACTCAAATT CTCTTTGGT TAGTCAGCTG GTACGAAAAG	4200
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TACCATCTGA AACTGTTAAA AATCTTGAAA GCAAGTTATC AAAACAAGAG AGTGTTCAC	4320
ACACTTTAAC TGCTAAAAAA GAAAATGTTG CTCCTCGTGA CCAAGAATTT TATGATAAAG	4380
CATATAATCT GTTAACAGAG GCTCATAAAG CCTTGTTTGA AAATAAGGGT CGTAATTCTG	4440
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AATTGGTAGA TGATTTATTG GCATTCTAG CACCAATTAC CCATCCAGAG CGACTTGGCA	4560
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ATAAGGAAAA AGTTGAGCT CAAGCCTATA CTAAAGAAAA AGGTATCCTA CCTCCATCTC	4800
CAGACGCAGA TGTTAAAGCA AATCCAAGT GAGATAGTGC AGCAGCTATT TACAATCGTG	4860
TGAAAGGGGA AAAACGAATT CCACTCGTTC GACTTCCATA TATGGTTGAG CATAAGTTG	4920
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CTTGGTTTGA TGATCACACA TACAAAGCTC CAAATGGCTA TACCTTGGA GATTTGTTT	5040
CGACGATTAA GTACTACGTA GAACACCCTG ACGAAGTCC ACATTCTAAT GATGGATGGG	5100
GCAATGCCAG TGAGCATGTG TTAGGCAAGA AAGACCACAG TGAAGATCCA AATAAGAACT	5160
TCAAAGCGGA TGAAGAGCCA GTAGAGGAAA CACCTGCTGA GCCAGAAGTC CCTCAAGTAG	5220
AGACTGAAAA AGTAGAAGCC CAACTCAAAG AAGCAGAAGT TTTGCTTGCG AAAGTAACGG	5280
ATTCTAGTCT GAAAGCCAAT GCAACAGAAA CTCTAGCTGG TTTACGAAAT AATTTGACTC	5340
TTCAAATTAT GGATAACAAT AGTATCATGG CAGAAGCAGA AAAATTACTT CCGTTGTTAA	5400
AAGGAAGTAA TCCTTCATCT GTAAGTAAGG AAAAAATAA CTAATGAAAA ATGAAAGTCT	5460
CGATAAAGAG GCTTTCATTT TTATTATGTA TATATGTAAA ATTCTTGACA AGCAATATTA	5520
AAAAGAGTAA ACTATTAAGT AGTTAATTAA CCGGTTTATT ACTTTATAGT GAATCAAATA	5580
TACTTAAGAA AAGAGGAAAG AATGAAAATT AATAAAAAAT ATCTAGCAGG TTCAGTGGCA	5640
GTCCTTGCCC TAAGTGTGTTG TTCCTATGAA CTGGTTCGTC ACCAAGCTGG TCAGGTAAAG	5700

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AAAGAGTCTA ATCGAGTTkC TTATATAGAT GGTGATCAGG CTGGTCAAAA GGCAGAAAAC	5760
TTGACACCAG ATGAAGTCAG TAAGAGGGAG GGGATCAACG CCGAACAAAT CGTCATCAAG	5820
ATTACGGATC AAGGTTATGT GACCTCTCAT GGAGACCATT ATCATTACTA TAATGGCAAG	5880
GTCCCTTATG ATGCCATCAT CAGTGAAGAG CTCCTCATGA AAGATCCGAA TTATCAGTTG	5940
AAGGATTCAG ACATTGTCAA TGAAATCAAG GGTGGTTATG TTATCAAGGT AGATGGAAAA	6000
TACTATGTTT ACCTTAAGGA TGCAGCTCAT GCGGATAATA TTCGGACAAA AGAAGAGATT	6060
AAACGTGAGA AGCAGGAACA CAGTCATAAT CACGGGGGTG GTTCTAACGA TCAAGCAGTA	6120
GTTGCAGCCA GAGCCCAAGG ACGCTATACA ACGGATGATG GTTATATCTT CAATGCATCT	6180
GATATCATTG AGGACACGGG TGATGCTTAT ATCGTTCCTC ACGGCGACCA TTACCATTAC	6240
ATTCTAAGA ATGAGTTATC AGCTAGCGAG TTAGCTGCTG CAGAAGCCTA TTGGAATGGG	6300
AAGCAGGGAT CTCGTCCTTC TTCAAGTTCT AGTTATAATG CAAATCCAGC TCAACCAAGA	6360
TTGTGAGAGA ACCACAATCT GACTGTCACT CCAACTTATC ATCAAAATCA AGGGGAAAAC	6420
ATTTCAAGCC TTTTACGTGA ATTGTATGCT AAACCTTAT CAGAACGCCA TGTGGAATCT	6480
GATGGCCTTA TTTTCGACCC AGCGCAAATC ACAAGTCGAA CCGCCAGAGG TGTAGCTGTC	6540
CCTCATGGTA ACCATTACCA CTTTATCCCT TATGAACAAA TGTCTGAATT GGAAAAACGA	6600
ATTGCTCGTA TTATTCCTCT TCGTTATCGT TCAAACCATT GGGTACCAGA TTCAAGACCA	6660
GAACAACCAA GTCCACAATC GACTCCGGAA CCTAGTCCAA GTCCGCAACC TGCACCAAAT	6720
CCTCAACCAG CTCCAAGCAA TCCAATTGAT GAGAAATTGG TCAAAGAAGC TGTTCGAAAA	6780
GTAGGCGATG GTTATGTCTT TGAGGAGAAT GGAGTTTCTC GTTATATCCC AGCCAAGGAT	6840
CTTTCAGCAG AAACAGCAGC AGGCATTGAT AGCAAACCTGG CCAAGCAGGA AAGTTTATCT	6900
CATAAGCTAG GAGCTAAGAA AACTGACCTC CCATCTAGTG ATCGAGAATT TTACAATAAG	6960
GCTTATGACT TACTAGCAAG AATTCACCAA GATTTACTTG ATAATAAAGG TCGACAAGTT	7020
GATTTTGAGG CTTTGGATAA CCTGTTGGAA CGACTCAAGG ATGTCyCAAG TGATAAAGTC	7080
AAGTTAGTGG ATGATATTCT TGCCTTCTTA GCTCCGATTC GTCATCCAGA ACGTTTAGGA	7140
AAACCAAATG CGCAAATTAC CTACACTGAT GATGAGATTC AAGTAGCCAA GTTGGCAGGC	7200
AAGTACACAA CAGAAGACGG TTATATCTTT GATCCTCGTG ATATAACCAG TGATGAGGGG	7260
GATGCCTATG TAACTCCACA TATGACCCAT AGCCACTGGA TTAAAAAGA TAGTTTGTCT	7320
GAAGCTGAGA GAGCGGCAGC CCAGGCTTAT GCTAAAGAGA AAGGTTTGAC CCCTCCTTCG	7380
ACAGACCATC AGGATTCAGG AAATACTGAG GCAAAAGGAG CAGAAGCTAT CTACAACCGC	7440

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GTGAAAGCAG CTAAGAAGGT GCCACTTGAT CGTATGCCTT ACAATCTTCA ATATACTGTA	7500
GAAGTCAAAA ACGGTAGTTT AATCATACCT CATTATGACC ATTACCATAA CATCAAATTT	7560
GAGTGGTTTG ACGAAGGCCT TTATGAGGCA CTAAGGGGT ATACTCTTGA GGATCTTTTG	7620
GCGACTGTCA AGTACTATGT CGAACATCCA AACGAACGTC CGCATTGAGA TAATGGTTTT	7680
GGTAACGCTA GCGACCATGT TCGTAAAAAT AAGGTAGACC AAGACAGTAA ACCTGATGAA	7740
GATAAGGAAC ATGATGAAGT AAGTGAGCCA ACTCACCTG AATCTGATGA AAAAGAGAAT	7800
CACGCTGGTT TAAATCCTTC AGCAGATAAT CTTTATAAAC CAAGCACTGA TACGGAAGAG	7860
ACAGAGGAAG AAGCTGAAGA TACCACAGAT GAGGCTGAAA TTCCTCAAGT AGAGAATTCT	7920
GTTATTAACG CTAAGATAGC AGATGCGGAG GCCTTGCTAG AAAAAGTAAC AGATCCTAGT	7980
ATTAGACAAA ATGCTATGGA GACATTGACT GGTCTAAAA GTAGTCTTCT TCTCGGAACG	8040
AAAGATAATA AACTATTTT AGCAGAAGTA GATAGTCTCT TGGCTTTGTT AAAAGAAAGT	8100
CAACCGGCTC CTATACAGTA GTAAAATGAA TGGAGCATAT TTTATGGAGA AGTAACCTTT	8160
CGTGTACTT CTCTTTTGA GAAAAACGTA ACAGA	8195

(2) INFORMATION FOR SEQ ID NO: 95:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2004 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 95:

TTTACTAAAA GGAAAAAGA ACTGATTCTT CAGTCCTTCA TTAATCTTAT TCCACACTAA	60
ATAGGTATGG GTAAACAGGT TGTGACCTT GGTGAATCTC GACTTCAACG TCTTCGAATT	120
CTTCTACGAT TTCTTGAGCG ATTTCAATTG CAAGTTCTTC GCTTCCGTCT TCACCTACAT	180
AGAAGGTTAC GATTTCACTG TCTTCATCCA ACATATGTTT CAAGGTTTCA GTCAATGTIT	240
GGTGCATATC AGGGTTTGAC ACAAGAATTT TTCCATCCAC CATACTTAAA TTATCGTTTT	300
CATGGATTTT TAAGCCATCG ATCGTTGTAT CACGCACGGC TGTGTGACG CTTCCGCTAA	360
CGACATCGCT AAGAGCAGCT GTCATACGCT CTTGGTTTTC TTCAATGGAC TTGCTTGGAT	420
CAAAGGCAAG AAGACTTGTC ATACCTTGAG GAAGAGTGCG AGCCTCTACC ACTACCGCTG	480
GTTGCTCCAA AACTTCTGCC GCAGATTGAG CTGCCATGAA GATGTTCTTG TTGTTTGGCA	540
AGAAGATGAT GTTACGGGCA TTAACCTGTT CAACAGCCTT GATAAAGTCT TCTGTTGAAG	600
GGTTCATGGT TTGACCGCCT TCGATAACAT AATCCACGCC TTGAGAACAG AAGATATCTG	660

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CTAGACCTTT ACCAGCCACC ACAGCAATCA AAGCATACTC TTTTCTTCA GCCGACTTGA	720
TAACTTGAGT AGCTTCTTTC TCAACCTGTG CTTCTGTGTG GTTACGCATA TTGTCAACTT	780
TTACCTTGAC CAAGCTACCA TATTGAGAC CTTCTTGCAT AACAACTCCT GGATCTTCTG	840
TATGAACATG GACTTTGACA ATTTTCATCAT CGTTAACAAC AAGGAGAGAA TCTCCAAGCT	900
CATCCAAGTA GTTACGGAAT TCATCGTAGT CAAAATCTTT AGCATAGGTT GGACCTTGCT	960
TAAGAGCTAC CATGATTTCA GTACAGTAAC CAAACGTGAT GTCCTCAGTC GCTACGTGAC	1020
CAGCTACAGA CTTATGATGC TCTACATTGA TCATCTCACT CATGTTGGCA GGAGTCGCTA	1080
CAAAGTCCTC AGATGCAATA TATTCGCCAG TAAGGGCTGA AAGGAAACCT TCGTAGATGA	1140
AGACCAATCC TTGACCACCT GAGTCCACAA CGCCAACCTT TTTCAATACT GGAAGCATGT	1200
CTGGTGT TTTT AGCTAGAGCT GTTTTAGCAC CTTCCAAGGC TCGCGCATG ACTTCAACAG	1260
CGTCATCTGT TTGCTCAGCT TTTTCTTAG CACCGATAGC AGCTCCACGA GAAACTGTTA	1320
AAATCGTTCC TTCAACAGGT TTCATCACTG CCTTATAGGC AACTTCCACA CCTGATTGGA	1380
AGGCCAGAGC CAAGTCTTGA CCTGTAACT CGTCTTTATC CTTGATAGCT TGGGAAAATC	1440
CACGGAAAAG CTGAGACGTA ATCACTCCTG AGTCCCACG CGCACCCATC AAAAGCCCTT	1500
TGGCAAGAAT GCTCGCTACT TCTCCAACG TAGAAGCTGG CTTGTCTGCA ACTTCTTTAG	1560
CACCATTTTC AATGGTCATT CCCATATTTG TCCAGTATC TCCATCTGGA ACTGGAAAGA	1620
CGTTTAATGA ATTGACATAT TCAGCTTGCT TATTCAAGCG AGTTGATGCA GCCTGCACCA	1680
TTTCTTGAAA TAAGCTAGTA GTAATTTTGT ACACGGTTAT TCTCCTACAA CTTTGATATT	1740
TTGAATGTAG ACATTTACAG TCTGAGCAGT AATTCCAAGC TGGTTTTCCTA AGCTAAAGGC	1800
AACACGCTCT TGAATGTTTT TTGACACTTC ACTAATCTTT GTTCCGTAGC TTAACACGGT	1860
ATATACATCA ACTGCAATAC TGCCATCTTC GGCTGCCTTT ACGACGACAC CTTTAGAATA	1920
ATTTTCCTTA CCTAGCAGGG CTTGGAAATT ATCTTTGAGG GCATTTTAC TAGCCATACC	1980
GACCACACCA GAAATCTCAG TTGC	2004

(2) INFORMATION FOR SEQ ID NO: 96:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 11915 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 96:

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CCGGGTTGGG CTGTTTCGCCC ATTAAGCGG CACCACAGCT GGGTTCAGAA CGTCGTGAGA	60
CAGTTCGGTC CCTATCCGTC GCGGGCGTAG GAAATTTGAG AGGATCTGCT CCTAGTACGA	120
GAGGACCAGA GTGGACTTAC CGCTGGTGTA CCAGTTGTCT TGCCAAAGGC ATCGCTGGGT	180
AGCTATGTAG GGAAGGGATA AACGCTGAAA GCATCTAAGT GTGAAACCCA CCTCAAGATG	240
AGATTTCCCA TGATTATATA TCAGTAAGAG CCCTGAGAGA TGATCAGGTA GATAGGTTAG	300
AAGTGGAAGT GTGGCGACAC ATGTAGCGGA CTAATACTAA TAGCTCGAGG ACTTATCCAA	360
AGTAAGTGA AATATGAAAG CGAACGGTTT TCTTAAATTG AATAGATATT CAATTTTGAG	420
TAGGTATTAC TCAGAGTTAA GTGACGATAG CCTAGGAGAT ACACCTGTAC CCATGCCGAA	480
CACAGAAGTT AAGCCCTAGA ACGCCGGAAG TAGTTGGGGG TTGCCCCCTG TGAGATAGGG	540
AAGTCGCTTA GCTCTAGGGA GTTTAGCTCA GCTGGGAGAG CATCTGCCTT ACAAGCAGAG	600
GGTCAGCGGT TCGATCCCGT TAACTCCCAT TTTAGCGGGT GTAGTTTAGT GGTAAACTA	660
CAGCCTTCCA AGCTGTTGTC GCGAGTTCGA TTCTCGTCAC CCGCTTTGAA CTTTGTCTCT	720
TGTACCAAGT TTTTGACTTG GCGCGTAGC TCAGGTGGTT AGAGCGCACG CCTGATAAGC	780
GTGAGGTCGG TGGTTCGAGT CCACTCGTGC CCATAGTGT TAGTCCATTA CTAGGGGATT	840
GGAATATTAT CTGTTCACTA AGAGGACACG GGCTTGTTC CGTATAAACT ATTTTGGAGG	900
ATTACCCAAG TCCGGCTGAA GGAACGGTC TTGAAAACCG TCAGGCGTGT AAAAGCGTGC	960
GTGGGTTCGA ATCCACATC CTCCTTTTAT ATTAACGCGG GATGGAGCAG CTCGGTAGCT	1020
CGTCGGGCTC ATAACCCGAA GGTCTAGGT TCAAATCCTG CTCCCGCAAT AAGGCTCGGT	1080
AGCTCAGTTG GTAGAGCAAT GGATTGAAGC TCCATGTGTC GGCGGTTCGA TTCCGTCTCG	1140
CGCCATTTAT ATATTTTGA AGGGTAGCGA AGAGGCTAAA CGCGGCGGAC TGTAATCCG	1200
CTCCTTCGGG TTCGGGGTTC CGAATCCCTC CCCTTCCATT TTACGGGCAT AGTTTAAAGG	1260
TAGAACTAAG GTCTCAAAA CCTTCAGTGT GGTTCAATT CCTACTGCCC GTGTTAATAG	1320
AATTATGGCG GGTGTGGTGA AGTGGTTAAC ACACCAGATT GTGGCTCTGG CATGCGTGGG	1380
TTCGATCCCC ATCACTCGCC TATTTTATAT TGGGTATAG CCAAGCGGTA AGGCAAGGGA	1440
CTTTGACTCC CTCATGCGTT GGTTCGAATC CAGCTACCCC AGTTACTATT TGCCGGCGTG	1500
GCGGAATTGG CAGACGCGCT GGACTCAAAA TCCAGTGTCC GCAAGGACGT GCCGGTTCGA	1560
CCCCGGCCGC CGGTATAGTA TAGTGTTAGG AACGTTGTTA TTCTTCGTTT CTTTTTATA	1620
TTATTTTGGG TATAATTATA GTTATTCAAA TTTTATTAG ATTAAGAAAG TGTAGGGGAG	1680
TATGCTTGT TCTATCGATT TATTAAAACA TCGGTATTTG AAAAATATTA AAGAAAATCC	1740
TGAATTGTTT GTCGGAATTG AGTTGGAGTA TCCTGTTGCA AGTTTAGAAG GGGATGCTAC	1800

735

AGATGTTGAA GTTATGAAGG ATCTATTTCA TTATTTAGTT TCTACTTTGG ATCTCACCCT	1860
AGCAAAGGTA GATGATTTTG GCAATCTGAT CCAGTTAGTA GATCCGATAA GTCAGGATGC	1920
TATTTTATTT GAAGTTTCCT ATACAACGAT TGAGTTTGCA TTTGGTAAGG CTGAAACGAT	1980
TCAAGAGGTC GAAAATCGTT TCAATAATTA TATGAATGTA ATTCAGAGAA AGTTAGCTGA	2040
ATCAAATCAT GCTATTGTTG GCTGTGGTAT CCATCCCAAC TGGGATAAAA ATGAGAATTG	2100
TCCAGTGGCT TATCCACGCT ATCAGATGTT GATGGATTAT TTGAATTTGA GTAGAAATAT	2160
TATTAAATCA GATTTACATC ATTTCCCTGA ATATGGTACT TTTATCTGTG GGAGCCAGGT	2220
TCAGCTGGAT ATTTCAAAAA CCAACTACTT ACGGGTGATT AATGCTTTTA CTCAAATTGA	2280
AGCGGCTAAG GCTTATTTAT TTGCAAACTC TGAATTTTCG GGTGCGGATT GGGATACGAA	2340
AATTTCAAGG GATATTTTCT GGAAGAATC TATGCATGGT ATCTATCCAG AGAATGTTGG	2400
GGTCAATGCT AGACTCCTTA ATGATGAAAC TGATTTTTTT GACTATCTAA ATCATTCTGC	2460
GATTTTACT GCGGAACGTG ATGGGCAGAC CTATTATTTT TATCCTATTC AGGCTGGGGA	2520
CTATTTGGCT ACGTCCGAAA TCCAAGCATT TGCTCTGAAT GGGGATGAGG TTATTATTTA	2580
CCCCAAGAG AAGGATTTTG AAATCATCG TAGTTACCAG TACCAAGATT TAACGACTCG	2640
AGGAACAGTT GAGTTTCGTA GTGTGTGTAC ACAGCCACTT GATAGGACTT TTGCTTCTGC	2700
AGCTTTTCAC TTGGGATTAT TGGTTAATTT AGACAAGTTA GAAGCTTACT TAGAAACAGC	2760
ACCTTTCTTT AAAGTATTTG GTTATGATTA CAAGTCTTTA AGGAGACAAT TTTCTAAGAA	2820
AAATCTTACA GATGAGGAAG AAATACGAT TATTGAATTT TCCAAAGACT TACTCCTACT	2880
AGCTGAGGAG GGAAGTAGTG TGAGAAATAA GGAAGAAATG ACCTATTTAC AGCCTTTGAG	2940
AGAAGAATTG AGCCTATAAT TTCTCTTATA AAGGGAGAAT TTTCTGAAAA ATCATGATAT	3000
AATGGACGAG ACTATAGATA AAGGATAGAG AGTAATGACA TTAGTTTATC AATCAACGCG	3060
TGATGCCAAC AATACAGTAA CTGCCAGCCA AGCAATTTTG CAAGGTTTGG CGACGGACGG	3120
CGGTTTGT TT ACACCGGATA CTTATCCAAA GGTAGATTTG AACTTTGACA AATTGAAAGA	3180
TGCTTCTTAC CAGGAAGTTG CTAAGCTAGT TTTGTCAGCA TTTTATAGATG ACTTTACAGT	3240
TGAGGAGTTG GACTACTGTA TCAACAATGC CTACGATAGC AAATTTGATA CTCCAGCTAT	3300
TGCACCATTA GTGAAATTAG ATGGGCAATA CAATTTGGAA CTTTCCATG GTTCAACGAT	3360
TGCCTTTAAG GATATGGCCT TGTCTATTTT GCCATACTTT ATGACGACTG CTGCTAAGAA	3420
ACATGGTTTG GAGAACAAGA TTGTTATCTT GACAGCGACA TCTGGTGACA CGGGGAAAGC	3480
TGCTATGGCG GGGTTTGCGA ATGTGCCTGG TACTGAGATT ATCGTCTTTT ATCCAAAGGA	3540

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TGGTGTCAAGC AAGATTCAAG AGTTACAAAT GACCACTCAG ACTGGCGACA ATACTCATGT	3600
TATTGCTATT GATGGTAACT TTGACGATGC GCAAACAAAT GTGAAGCACA TGTTTAACGA	3660
CGTGGCTCTT CGTGAAAAAT TGA CTACTACCAA CAAGTTGCAA TTTTCATCAG CTAACCTCTAT	3720
GAACATTGGT CGTCTGGTGC CACAAATTGT TTATTATGTT TATGCTTACG CTCAATTGGT	3780
TAAGACTGGT GAAATTGTAG CTGGTGAAAA GGTTAACTTC ACAGTACCAA CAGGAACTT	3840
TGGAAATATC TTGGCTGCCT TTTATGCCAA ACAAATTGGT TTGCCACTTG GTAAATTAAT	3900
CTGTGCTTCA AATGACAACA ATGTTTTGAC AGACTTCTTT AAAACACGTG TCTATGACAA	3960
AAAACGTGAG TTTAAGGTAA CAACCAGCCC ATCTATGGAT ATCTTGGTAT CTTCAAACCTT	4020
GGAGCGCTTG ATTTTCCATC TTTTGGGAAA TAATGCTGAA AAGACAACCTG AACTTATGAA	4080
TGCCTTGAAC ACGCAAGGAC AATATAAGTT GACAGACTTT GATGCAGAGA TTTTGGACCT	4140
CTTTGCAGCT GAATATGCGA CTGAGGAAGA AACGGCAGCA GAGATCAAGC GTGTTTGTGA	4200
GTTAGATTCT TATATCGAGG ACCCTCATAC AGCTGTGCT TCAGCAGTTT ATAAAAATA	4260
CCAAATCGGCC ACTGGAGATG TAACTAAGAC AGTGATTGCT TCAACAGCTA GTCCATACAA	4320
GTTCCAGTA GTTGCAGTAG AAGCTGTAAC TGGAAAAGCA GGTTTAACAG ACTTTGAAGC	4380
CTTGGCTCAA TTACATGAAA TCTCAGGCGT TGCAGTGCCA CCAGCAGTTG ATGGGCTTGA	4440
AATAGCTCCA ATTCGTCACA AGACAACAGT GGCAGCTGCT GACATGCAAG CAGCGGTTGA	4500
GGCTTATTTA GGACTTTAAG ACAGAGGGAG CAAACTCGGT TGGGAAACCA ACTGAGTTTC	4560
TTTTTCATCAG GAGGAGAGAT TGTTTAAGAA AAATAAAGAC ATTCTTAATA TTGCATTGCC	4620
AGCTATGGGT GAAAACTTTT TGCAGATGCT AATGGGAATG GTGGACAGTT ATTTGGTTGC	4680
TCATTTAGGA TTGATAGCTA TTTCAGGGGT TTCAGTAGCT GGTAATATTA TCACCATTTA	4740
TCAGGCGATT TTCATCGCTC TGGGAGCTGC TATTTCCAGT GTTATTTCAA AAAGCATAGG	4800
GCAGAAAGAC CAGTCGAAGT TGGCCTATCA TGTGACTGAG GCGTTGAAGA TTACCTTACT	4860
ATTAAGTTTC CTTTTAGGAT TTTTGTCCAT CTTGCTGGG AAAGAGATGA TAGGACTTTT	4920
GGGGACGGAG AGGGATGTAG CTGAGAGTGG TGGACTGTAT CTATCTTTGG TAGGCGGATC	4980
GATTGTTCTC TTAGGTTTAA TGA CTAGTCT AGGAGCCTTG ATTCGTGCAA CGCATAATCC	5040
ACGCTGCTCT CTCTATGTTA GTTTTTTATC CAATGCCTTG AATATTCTTT TTTCAAGTCT	5100
AGCTATTTTT GTTCTGGATA TGGGGATAGC TGGTGTGCT TGGGGACAA TTGTGTCTCG	5160
TTTGGTTGGT CTTGTGATTT TGTGGTCACA ATTAAACTG CCTTATGGGA AGCCAACTTT	5220
TGGTTTAGAT AAGGAACTGT TGACCTTGGC TTTACCAGCA GCTGGAGAGC GACTTATGAT	5280
GAGGGCTGGA GATGTAGTGA TCATTGCCTT GGTGCTTCT TTTGGGACGG AGGCAGTTGC	5340

737

TGGGAATGCA ATCGGAGAAG TCTTGACCCA GTTTAACTAT ATGCCTGCCT TTGGCGTCGC	5400
TACGGCAACG GTCATGCTGT TGGCCCGAGC AGTTGGAGAG GATGATTGGA AAAGAGTTGC	5460
TAGTTTGAGT AAACAAACCT TTTGGCTTTC TCTGTTCCCTC ATGTTGCCCC TGTCCTTTAG	5520
TATATATGTC TTGGGTGTAC CATTAACCTCA TCTCTATACG ACTGATTCTC TAGCGGTGGA	5580
GGCTAGTGTT CTAGTGACAC TGTTTTCACT ACTTGGGACC CCTATGACGA CAGGAACAGT	5640
CATCTATACG GCAGTCTGGC AGGGATTAGG AAATGCACGC CTCCTTTTTT ATGCGACAAG	5700
TATAGGAATG TGGTGTATCC GCATTGGGAC AGGATATCTG ATGGGGATTG TGCTTGTTG	5760
GGGCTTGCCT GGTATTTGGG CAGGGTCTCT CTTGGATAAT GGTTTTCGCT GGTATTTCT	5820
ACGCTATCGT TACCAGCGCT ATATGAGCTT GAAAGGATAG GAAATGCAAA AAACAGCTTT	5880
TATTTGGGAT TTAGACGGGA CTTTATTGGA CTCTTACGAA GCGATTTTAT CAGGGATTGA	5940
GGAGACTTTT GCTCAGTTTT CTATTCCTTA TGATAAGGAG AAGGTGAGAG AGTTTATCTT	6000
CAAGTATTCG GTGCAAGATT TGCTTGTGCG GGTGGCAGAA GATAGAAATC TGGATGTTGA	6060
GGTGCTAAAT CAGGTGCGTG CCCAGAGTCT GGCTGAGAAG AATGCTCAGG TAGTTTTGAT	6120
GCCAGGTGCG CGTGAGGTGC TAGCTTGGGC AGACGAATCA GGAATTCAGC AGTTTATATA	6180
TACTCATAAG GGGAAACAACG CTTTTACCAT TCTCAAGGAC TTGGGGGTGG AATCCTATTT	6240
TACAGAGATT TTAACCAGTC AGAGTGGCTT TGTGCGGAAG CCAAGTCCAG AAGCGGCTAC	6300
CTATCTGCTA GATAAGTATC AGTTGAATTC TGATAATACT TATTATATAG GGGATCGGAC	6360
TCTGGATGTG GAATTTGCCC AGAATAGTGG GATTCAAAGC ATCAACTTTT TAGAGTCTAC	6420
TTATGAAGGG AATCAGAGGA TTCAAGCGTT AGCAGATATT TCCCGTATTT TTGAGACTAA	6480
GTGATAAAAA GATTGTGTCA GTTTTGTGAC AGAGACCTAA CAAACTATTT CAAGTAACCT	6540
AGTTTGTGTAC AAGGAATAGA CAGTTCTGTT AAATAGGCCC GAGAGGGCTT TTTTCTACA	6600
TTTTTTGTGT TATGATAGAC AGGTACTCAT TTGAAAGGAA TTTGAAAGAA TGAAGAAAAG	6660
AATGTTATTA GCGTCAACAG TAGCCTTGTC ATTTGCCCCA GTATTGGCAA CTCAAGCAGA	6720
AGAAGTTCTT TGGACTGCAC GTAGTGTGTA GCAAATCCAA AACGATTTGA CTAAAACGGA	6780
CAACAAAACA AGTTATACCG TACAGTATGG TGATACTTTG AGCACCATTG CAGAAGCCTT	6840
GGGTGTAGAT GTCACAGTGC TTGCGAATCT GAACAAAATC ACTAATATGG ACTTGATTTT	6900
CCCAGAAACT GTTTTGACAA CGACTGTCAA TGAAGCAGAA GAAGTAACAG AAGTTGAAAT	6960
CCAAACACCT CAAGCAGACT CTAGTGAAGA AGTGACAACT GCGACAGCAG ATTTGACCAC	7020
TAATCAAGTG ACCGTTGATG ATCAAAGTGT TCAGGTTGCA GACCTTTCTC AACCAATTGC	7080

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AGAAGTTACA AAGACAGTGA TTGCTTCTGA AGAAGTGGCA CCATCTACGG GCACTTCTGT	7140
CCCAGAGGAG CAAACGACCG AAACAACCTCG CCCAGTTGAA GAAGCAACTC CTCAGGAAAC	7200
GACTCCAGCT GAGAAGCAGG AAACACAAGC AAGCCCTCAA GCTGCATCAG CAGTGGAAGT	7260
AACTACAACA AGTTCAGAAG CAAAAGAAGT AGCATCATCA AATGGAGCTA CAGCAGCAGT	7320
TTCTACTTAT CAACCAGAAG AGACGAAAAT AATTTCACA ACTTACGAGG CTCCAGCTGC	7380
GCCCGATTAT GCTGGACTTG CAGTAGCAAA ATCTGAAAAT GCAGGTCTTC AACCACAAAC	7440
AGCTGCCTTT AAAGAAGAAA TTGCTAACTT GTTTGGCATT ACATCCTTTA GTGGTTATCG	7500
TCCAGGAGAC AGTGGAGATC ACGGAAAAGG TTTGGCTATC GACTTTATGG TACCAGAACG	7560
TTCAGAATTA GGGGATAAGA TTGCGGAATA TGCTATTCAA AATATGGCCA GCCGTGGCAT	7620
TAGTTACATC ATCTGGAAAC AACGTTTCTA TGCTCCATTC GATAGCAAAT ATGGGCCAGC	7680
TAACACTTGG AACCCAATGC CAGACCGTGG TAGTGTGACA GAAAATCACT ATGATCACGT	7740
TCACGTTTCA ATGAATGGAT AAACCCGACT TGATAACATC ATTTTGACGA ATGAGATCTA	7800
GCTTTCGTGA TGGAAAGCGA TTCTCGTTCG TTTTTCCTTT GTCATACTCT TCGAAAATCT	7860
CTTCAAACCA CGTCAGTTTT ATCTGAAACT TCAAAGCTGT GCTTTGAGCA ACCTGCGACT	7920
AGCTTCTTAG TTTGCTTTTT GATTTTCATT GAGTATCAAT TTGAATGGAA AATGGAAAGT	7980
TATCATCTTG TAATGAGTTA AGCAACATTC TTGCAATCTA TTTTACTTTA TATCACAATT	8040
AATTAGTCAA ATATTGATAA ATCAATAAAA AGAGAGGGGA AGAAATGCTA GAGATTCAAG	8100
ATTTACTGTA TCAACTCCGC TTGTCTGAGC AAGCGAGTAC GCAATTGTTT GAAAAAAGGC	8160
TTGGGATTAG TTTGACACGG TATCAGATTT TACTGTTTTT GCTGGAGCAT TCTCCTTGTA	8220
ACCAAAATGGC GGTTCAGGAG CGTTTGAAAA TTGATCAGGC TGCTTTGACA CGGCATTTCA	8280
AAATTTTGGA AACGGAAGGT TTGGTGGAGC GTCATCGTAA TCCTGAAAAT CAGCGGGAAG	8340
TGTTGGTAGA GGCTGCGAAG TATGCCAAGG AGCAGTTAGT GGTGAATCCC CCTCTGCAAC	8400
ATATCAGGGT TAAGGAAGAG ATAGAAAGTA TCTTAACAGA GTTTGAGAGA ACAGAACTCA	8460
GCCGTTTATT AAATAAATTG GTTTTGGGTA TTGAAAATAT AGAAATTTAA GGAGAAATAG	8520
ATGTCAATTA TTTTAACAAC GATCGTTGCT TTGGAGCATT TTTACATTTT TTATTTGGAA	8580
AGTATGCCA CGCAATCAGA TCGGACTAGT CGTGTATTTA ATATGGAAAA GGAAGAATTG	8640
GCTCATCCGT CAGTAAGTTC ATTGTTCAAA AATCAAGGAA TTTATAAGGC TCTGCTAGGA	8700
GTCTTCTCT TGTATGTCAT TTATTTCTCA CAGAATTTAG AAATTGTGAC TATTTTGTGTC	8760
TTATTTGTGA TTGGTGCTGC GACTTACGGC TCTTTAACAG CGGATAAAAA AATTATTTTG	8820
AAACAAGGTG GATCAGCTAT TTTGGCCTTG ATTAGTATTT TACTCTTTAA ATACACTTGA	8880

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AGGTCGATTC TAATCTCGCT AATCCTTTTT AATCCAGAAT AAGGGAAATA TGTATACTT	8940
GTTTTTAAGA AAAAAGTCTC ATTGAATTGG TTTTGAGGAG TTAGAAATGA AAGTATTAGT	9000
GACAGGTTTT GAGCCCTTTG GAGGGGAAAA GGGCAATCCA GCTTTGGAGG CCATTAAAGG	9060
TTTACCAGCT GAAATCCATG GTGCTGAGGT CCGTTGGCTA GAGGTGCCGA CAGTTTTTCA	9120
CAAACTGCTC CAAGTATTGG AAGAAGAGAT GAATCGTTAT CAACCTGACT TTGTCCTTTG	9180
TATTGGGCAA GCTGGTGGAA GAACTAGTTT GACACCTGAA CGAGTGACCA TTAATCAAGA	9240
CGATGCATGC ATTTCTGATA ACGAAGATAA TCAACCGATT GACCGTCCCA TTCGCCCAGA	9300
TGGTGCTTCG GCCTACTTTA GTAGTTTGCC GATTAAAGCG ATGGTTCAAG CTATAAAAAA	9360
AGAGGGCTTA CCGGCCTCTG TTTCCAATAC GGCAGGGACT TTTGTCTGCA GCCATTTGAT	9420
GTATCAGGCT CTCTATTTGG TAGAAAAGAA ATCTCCATAT GTTAAGGCAG GTTTTATGCA	9480
TATTCCTTAT ATGATGGAAC AGGTGGTGAA CAGACCGACT ACTCCAGCTA TGAGTTTAGT	9540
GGATATTCGG CGAGGGATAG AAGCAGCAAT CGGCGCTATA ATAGAACATG GAGATCAGGA	9600
ACTCAAGTTG GTAGGCGGAG AAACCTCATG ATAGAAAAAA GCTTGAGGGG AAAAACCTTC	9660
AAGCTTTTGG ACGTTTTCGG GCCAATACTG CTCGGTAAAA CATAATTTTA GTGCATTGGA	9720
TATAAGGTAG GAGTGAAAAA CTAGCAATGC CAAAGGTAAT CCAATTGAGG AAGTACCAAG	9780
GAAGAAGCTG TAAATCTAGG ACAAAGTGCT GGAACCTGTA GCCCTTCATA AAGGAACGGC	9840
TAGTTTTTAG GATTCGTCTT GGTGGGACCT GTCCTAGGTC TAGACTATAA CAGAGAAGAA	9900
ATTCCACCTG TGAATAGGCA TAATACTGTG GAATATAGAG GATATTTCTT ACAATGATCA	9960
AGATGAGACT TGCAAGAAAG TAGAGTCCAA AGACCATGAG GAAACGCTCG GTTTCAACTG	10020
ATGAGAGATC TAGATTTGGA AACTCAGGAT GTAGGGTGAC GAATTTTTTG GCTAAAAAGC	10080
TACTATAAAA GAGGAGGTAA ATCCCAAGTA AATTAGGGAT ACTCCATAAA AAGAGATAGA	10140
AACGTTTGAG AAGTAGGGTC AAAAAGGTTT GAGAAAAGCG CTCCTCATCA AAGAGAGCTA	10200
GGCTGTTTTT TACAGATGGC TCCGTTTTAG AATCTTTCAT GAGTGTCAGT GTTGCATAGA	10260
CGGAACGGT CAAAAGAATA GTCCCGATAA AGGAGACTAG TAGAGGAAAG AGGTAGGTTT	10320
GAAGTATTTG GCCAAGTATG CTGAAAAATG GCTGTTCTAA AACAGTCCCG TGGATCCGAG	10380
ATAAGGGATT AAGAAAACCA GATAAGATGA CCAGCATACT GGAAGGATA TAGAGGAGAA	10440
AGAGACGGGG GGTGTCAGCC TGAAAATGTT TTGACTCCTG ACGAATTGTT TTTAAATCAA	10500
TTTTTTGATA GTTCATTCTC TTATTATACC ATAGTTCTTA TACATAGTTC GTGACAGTTC	10560
CTACTTTTTT TGATAAAATC ATACAGTGTG TCCTTGGGCA CACTGTATGA ACTGGGACTG	10620

740

TCTTTCCCAG CTTCGGAGGT AAAAAATGTC AGATTACCA ATCAAATATC GTTTGATTAA	10680
GAAAGAAAA CACACAGGAG CTCGTCTGGG AGAAATCATC ACTCCCCACG GTACCTTTCC	10740
GACACCTATG TTTATGCCAG TTGGGACACA AGCCACTGTC AAAACTCAGT CACCTGAAGA	10800
ATTGAAGGAG ATGGGTTCGG GAATTATCCT ATCAAACACC TATCATCTCT GGCTTCGCCC	10860
TGGAGATGAA CTCATTGCAC GCGCTGGTGG TCTCCACAAG TTCATGAATT GGGACCAGCC	10920
TATCTTGACA GATAGTGGTG GTTTTCAGGT TTATTCTTTA GCAGATAGCC GTAATATCAC	10980
AGAAGAAGGA GTAACCTTTA AAAATCATCT AAATGGTCT AAGATGTTCC TATCCCCAGA	11040
AAAAGCCATC TCTATTCAGA ATAATCTGGG TTCAGACATC ATGATGTCCT TTGATGAATG	11100
TCCTCAGTTT TATCAACCTT ATGACTACGT TAAGAAATCG ATCGAGCGTA CCAGCCGTTG	11160
GGCTGAGCGT GGTTTGAAGG CTCACCGTCG TCCACATGAC CAAGGTTTGT TTGGAATTGT	11220
GCAAGGTGCA GGATTGAAG ACCTTCGCCG CCAATCAGCT CATGATCTTG TCAGCATGGA	11280
TTTCTCAGGC TACTCTATCG GTGGTTTGGC AGTGGGAGAA ACCCATGAAG AGATGAATGC	11340
GGTCTTGAC TTTACAACCTC AACTGCTGCC TGAATAATAA CCTCGTTATC TGATGGGTGT	11400
GGGAGCGCCA GATAGCTTGA TCGATGGGGT CATTCGTGGG GTGGATATGT TTGACTGTGT	11460
CTTACCGACT CGAATTGCTC GTAACGGGAC TTGTATGACC AGTCAAGGAC GTTTGGTTGT	11520
GAAAAATGCC CAGTTTGCTG AGGACTTTAC GCCACTGGAT CCTGAGTGTG ATTGCTACAC	11580
ATGTAATAAC TATACACGCG CTTACCTTCG TCACCTGCTC AAGGCTGATG AAACCTTTGG	11640
TATCCGCTTG ACTAGCTACC ACAATCTTTA CTCTTGCTT AACCTGATGA AGCAAGTGCG	11700
ACAAGCCATC ATGGATGACA ATCTCTTGA ATTCCGTGAG TATTTTGTGG AAAAAATATGG	11760
CTATAATAAG TCAGGACGTA ATTTCTAAAA TGGAATTGAT ATAAAAAAT CCTAAGTTTT	11820
CTCTTAGGAT TTTTCTTCTT TTTTGTATAG AATAAAGTGT ACAATGAAAG GAAGAATAAA	11880
CTCGTATGCG CATTAAATGG TTTTCCTCGA TTAGG	11915

(2) INFORMATION FOR SEQ ID NO: 97:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 9069 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 97:

GAGAGGGCAA CAGTTCTATC GCTTCAAATT TTTTCTGGT TTGCAGATAT TCAAGAATCG	60
GGAGTTTTTC TATAGTATTC GGCAGATTTA TTACAGCCAA GCATCTCAA AATACGGACA	120

741

GCATCCTCCA TCTTTTCTG GCCTTCCTTG ACTCTACCTT GCTTGCTATC AAGGAGACCT	180
TCTGCCCACA GATAACAAT TCGGAAATAG GTCTCATTTT CCTTGTAGAA ATGCTCTTCG	240
ATAACACGTT TAAATAATA GGCATTGGTA AATTCTTCAC ACTCAATACT AGCTAAAAAG	300
CCATTCAATA GTATAGTATG AAAAAGGTTT CGATTGCCAG ACATTTCCAT TAGAAAATCA	360
GATTTACGTA CCATTTCTCG TACATATCTA GTAAAAAGAG AAACAGATAA AAATGGAGAA	420
CTGACTGAAA ATAAATTGAG TTCATAGATT CCCCAGATCT CGGTAGAAAA CAAATAATCA	480
TGAAGGACTT TTCCTTCCTC TGCTGTAAAG TCTACCCTTT CATCTATGCT CTTCATATAA	540
GACTTGATAA TAATGGCATT TAGAATATGT TTCTGTTTGT TGTGAGAATG GGCATGCTTT	600
TATACTCCCT GCGATATAAG TCCTCAAGAG GTGCTATATT CTTTGGTTCC AAGACATCTG	660
TAATTTCTTT TCTCAACTCA GAATCTGTAT CATACTGGAA ACCTCTTGCC AGAAAGAGGA	720
TCTCTCCAC ACTGGCAGAT ATATTTTCCA GAGCAAATAG AAACCTTTCC ACCGAAAGCT	780
CACTCTGACC TGTTTCAAAA CGGGACAACA TAGACGGCGA AAATTGTCCT CCGGTTGCTT	840
GTCTCAGTGA GATATTCTT GACTCTCGTA ATTGTCTAAA GACTTTTCCA ATCTGCTCCA	900
TAGACTTCCC CTTGATTCG TATTTTCTTC ATTTTATCAT ATTTTTCAGA AAATTCATCA	960
AAACTTGCC AAATTGTCAG AATTATGAGA AAATAGAGGA TATTTATCAC GTGGAGGGAC	1020
TGCTATGAGA GACGATATCA AAATCAATGA CCGTGCTTTG GCCTTGCAAG ACCAAATTAT	1080
CGAAAACTA GAGAAAGTTT TTGATACAGA TGTGGAATTG GATGTTTACA ATCTAGGTCT	1140
GATTTATGAA ATCAATCTGG ATGAAACGGG GCTCTGCAAG ATTGTCATGA CCTTCACCGA	1200
TACTGCCTGT GATTGCGCCG AAAGCCTGCC TATTGAAATC GTGGCAGGTC TGAACAAAT	1260
CGAGGGTATC AAAGATATCA AGGTTGAAGT TACCTGGTCG CCTGCTTGA AAATCACACG	1320
AATCAGTCGC TATGGCCGTA TTGCCCTTGG ACTACCACCT CGTTAAGCAG ACCAATCACT	1380
TTTAAAGATG AAAATCAAAG GGCAAACCTAG AAAACTAGCC GCAGGTTGCT CAAAACACTG	1440
TTTTGAAGTT ATGGATAGAA CTGACGAAGT CAGCTCAAAA CACTGTTTTG AGGTTGTGGA	1500
TAGAACTGAC GAAGTCAGCT CAAAACACTG TTTTGAGGTT GTGGATAGAA CTGACGAAGT	1560
CAGCCCAAAA CACTGTTTTG AGGTTGTGGA TAGAACTGAC GAAGTCAGTA ACCATACCTA	1620
CGGCAAGGCG ACGTTGACGT GATTTGAAGA GATTTTCGAG TATGAGTTTA TTTTTCACCT	1680
GACTTGTCCA TATCCAGAA GTCTGTCACG GCTCCGCGTG AAGCAGATGA TACGATGTGG	1740
GCATATTTAC CGAGGACACC ACGGCTGTAA AGTGGTGGCA AGGTTGTTTC TGCCTTGCGT	1800
TTTTCAAGTT CTCTTCGGA TACGGCCATA GAAATTTCTT TGGTATCTTG GTCAACCGTA	1860

742

ACGATATCGC CGGTACGGAG ATAGGCAATT GGTCCACCAT CCTGAGCTTC AGGAGCGATA	1920
TGTCCAACAA CCAGACCATA AGTACCACCA GAGAAACGTC CGTCCGTCAA GAGGGCCACC	1980
TTATCTCCCT GACCTTTACC AACAAATCATT GAAGAAAGTG ATAGCATCTC AGGCATACCA	2040
GGACCACCTT TAGGTCCAAC AAAACGAACA ACGACTACAT CGCCATCAAC GATTTTCATCT	2100
GTCAGAACGG CCTGAATCGC ATCTTCTTCT GAGTCAAAGA CCTTAGCTGG CCCAACGTGA	2160
CGACGCACTT TAACACCTGA TACCTTGGCA ACTGCACCGT CAGGAGCAAG GTTCCCGTTC	2220
AAGATGATAA GCGGACCATC CGCACGTTTT GGATTTTCAA GTGGCATGAT AACTTTTTTG	2280
CCTGGAGTCA AGTCTGCAA GTCAGCCAAG TTTTCAGCTA CAGTCTTACC AGTACATGTG	2340
ATGCGATCTC CGTGAAGGAA ACCATTTGCC AACAAATACT TCATAACCGC AGGGACACCA	2400
CCGACTTCGT AGAGGTCTTG GAAGACATAC TGACCAGATG GTTTCGAAGTC GGCCAAGTGA	2460
GGCACACGTT CTTGAATCGT ATTGAAGTCC TCAAGTGACA AGTCAACATT TGCGGCATGG	2520
GCAATGGCGA GCAAGTGAAG AGTGGCGTTT GTAGAACCAC CGAGAGCCAT CGTTACAGTG	2580
ATAGCATCTT CAAAGGCTTC ACGAGTCAAG ATATCTGATG GTTTGAGACC AAGTTCCAAC	2640
ATCTTAACAA CAGCACGTCC TGCTGCTTCG ATATCTTCTT TCTTATCAGC TGATTCAGCT	2700
GGGTGAGAGG ATGACCCTGG CAAACTCATC CCTAGAACTT CGATAGCAGT TGCCATGGTA	2760
TTAGCAGTAT ACATACCACC ACAACCACCA GGGCCAGGGC AGGCATTACA TTCAAGACGT	2820
TTCACGTCCT CAGCTGTCAT GTCACCGTGG TTCCATTTTC CGATACCTTC AAAGACAGAA	2880
ACCAAGTCGA TATCTTTACC ATCAAGATTT CCCGGTGCAA TAGTTCCACC ATAGGCGAAA	2940
ATAGCTGGGA TATCCATATT AGCAATAGCA ATCATAGATC CAGGCATGTT CTTGTACACG	3000
CCACCGATAG CGACGAAGGC ATCCACGTTG TGACCACTCA TAGCCGCCTC GATGGAGTCC	3060
GCGATGATGT CACGAGATGT TAGAGAGAAA CGCATACCAG GCGTTCCCAT AGCGATCCCG	3120
TCCGCTACGG TAATGGTTCC AAATGTACA GGCCAAGCGC CTGCAGATTT GACACCTTCT	3180
TTAGCCAGTT TCCCGAAATC ATGCAAGTGA ATGTTACATG GTGTATTTTC CGCCCAAGTC	3240
GAAATCACTC CCACAATCGA TGTTTCAAAG TCCTTATCTG TCATACCAGT CGCACGAAGC	3300
ATAGCACGGT TAGGTGATTT AACCATGCTG TCATAAATGC TACTGCGGTG ACGTTTATCT	3360
AATTCAGTCA TCTTATCCCT CCCATTTTCTG TTTTACTAT TATAGCAGAA TTTTCGCATG	3420
AAGAACAGAA TAAATTTCTT GAATTTTCTG AAAATTTCTAT ACACATGTGA AATATTTAAA	3480
ATTAAAAACA ACAAAGCGGA TTAGTGCACT TTCTGATGAC CAGAATATGC TTTTAAATCC	3540
GCTTCTTTA AATAACGTAC TGTAATTTT ACAGAAATTC TTTCAAATAA GTGTATTTAA	3600
CATCTATCTT GCATTATAAA TTTCTAGAAC CTTCTCTTTT ATATTCGATT CACTCAAACC	3660

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ATACTCATTA AGAAGATAAT CCATTTTCCC TACTTGACCG AATCTTTCTT GAACACCCAT	3720
CCGATGAATT TTTGTTATTC CATCATCAGA GAATAATTCA CATAAAGCAC TGCCAATTCC	3780
ACCTATCTGA TTGTGGTTTT CTACAGTAAA TATAGTTTTT CCACTTAACA TTGTTTTTAT	3840
CTGTTCTGGT ATCGGTTTGA TTCTAAATAA ATCTATCACA CCTACTGAAT AACCTAATTT	3900
AGACAGTTCA TCTGCAACTC GAATACTTGG AGCAACCATT ATGCCAGAAG CAACGATTAC	3960
AAGATCTTCA CCATGCCTTA ACTCAATGTA GCCTTTAGAA AAATCTTCTC CACCTTGATA	4020
CACAGGAACT GGAGCTTTTC TAATGTTCG AATATATTTT AGTCCTTTTA AGTCTAATGT	4080
CTGGTTCAAT ATTTACAGAA ATTGGATATC ATCAGTTGCT TCGAAAATGA TTGATTTAGG	4140
AATTAAACGT AACAAATCCAA TTTCTTCAA TGGCATATGT GTTCCACCAT TCATCTCTGC	4200
CGTTACTCCT GCATCTGATC CAATCACAGT GGCATCCAAT TGTGCGTATC CAAGAGAAAT	4260
AAATAATTGA TCAAATACTC TTCGTGAAGC AAAAGGACCA AATGTATGAA GATAAGGTCT	4320
AAACCCCTGA ATAGACAAGC CTGCTGCAAG GCCGACCATT TCTGCTTCCA TAATCCCAAC	4380
ATTCACATAA CGGTCTCCAA AGTCCTTTTC AAGATTATTA GTAGCCATCG AACTTGACAA	4440
ATCGGCTTCT AAGACTACTA TATCAGAATC ACTTTGATTA GCCTCTAAAA GGAAGTCTCT	4500
ATATACATGC CGTAATTCTT TCGTACTTCT CATCATCTCTG TTTCTCTCAA TTCCTGACTT	4560
AATCTTTCTA CAACTGAAGT TAACATTGT TTCTCCTCTA CAGTAGGGCG AAGATGATGA	4620
TTGGATTTCA TTTCTTCCAG CTCTTGAACC CCTTGACCTT TAATAGTATC TAATACAATG	4680
CACTTAGGTG ATGAATTATT TGACTGTTTT AATTGGACAA TCCCTTCATA AATTCTCTA	4740
ATATCTGAAC CCTTGACCCT AATGGATTCA AATCCAAATG CTGAAAATTT TTCTACGAAA	4800
TCACCTGGAT TACAAATATC CTTTGTAATA CCATCTAATT GTTTTTTGTT ATCATCAACA	4860
AATACAATTA AGTTGGATAA CTGTTGATGA GAAGCAAACCT GTATAGCCTC CCAACATTGT	4920
CCCTCATTTA ACTCACCATC TCCAACAATA GCGTAAGTAT AAAAGGGACT CTTTCTTATT	4980
CTCTGACCAT ATGCAAGTCC AGTTGCAACA CTAATTCCTT GTCCTAAAGA GCCCGTTGTC	5040
ATATCTATGC CTGGCGTTAG ATTTCTATCA GGATGAGACG GTAATTTGGT TCCATTTGTA	5100
TTTAAAGAAT ATAAGAATTC TTTGTCAAAG AAACCATTCA AATAGAGTGT ACTGTATAGA	5160
GCTGGTCCTC CGTGACCTTT TGATAATATG AAATAATCTC TATCTCGTGC TGCAAATATT	5220
TCTGGAGTCA TTGGCATTAT TTCACCATAA AGCACCGCTA AACTTCTAC GATAGACAGA	5280
CTTCCTCCGT AATGTCCGAA TCCAAGATGA TTCAATGTTT TAAGAGTATT TAATCGGATG	5340
TTAGTCGCAA ATTTTCTTAA CCCATCTTCT CTATTTTAC TTAAATCAT CCCTTATGCC	5400

744

TCCGTTGCAG ATGGCTTTTT AATAAAGGAT ACTCCAAACA TAACTGCTAG AATAAGAACA	5460
AGACCAATCA CAATGCCTGC TTGTGAGCCA AATTGATTTA ACATTCCTAA AATAATTCCT	5520
GATAGACCAA AATCTGCATC TGAGAAAGTT GATCCTTGGA AACCAAGTCC TCCCAAACT	5580
GGCATTAAAA AGACTGGAAG AAAACTGATT AAAATACCTT GTAAAAATGC TCCAATAGTG	5640
GCTCCACGAA CACCACCAGA TGCATTCCCA ATGACACCTG CAGTCGCTCC ACAGAAGAAA	5700
TGAGGCACAA CACCTGGTAA GATAACAACC GTTCCTGAAG CAATCATAAT TACCATACTT	5760
ACTAAACCAC CAACAAAAC AGAGATAAAT CCAATTAGAA CTGCATTGGG TGCATAAGTA	5820
TAAACAATCG GACAATCCAA AGCAGGTTTT GAATTAGGTA CAAGACGCTC TGAAATACCT	5880
TTAAAGGCTG GAACAATTC GCCCAAAATA AGGCGAACAC CTGCTAAAAT AACAAATACC	5940
CCTGCTGCAA ATTGACCTGC TAATTGTAAA GCATAAACTA GACCACTTGT ACCACTACTG	6000
ATTTCTTTTT CTATATATTC TGACCCTGCA AAGATAGCTA CAATAATGTA AATAACTGCC	6060
ATGGATAAAG TAATACTAAC AGTACTATCA CGTAAAAAG CTAACTCTT TGGAAATTTA	6120
ATGTCCTCTG TTGATTTTGA TTTGTACCG ATAAGGCTAC CAGTAAACC ACTCAACCAA	6180
TATCCCAAAG AACTGAAATG ACCTAAAGCT ACCTGTGCAT TTCCAGTTAA TTGAACCATA	6240
TATTTTGTGA CAAATGCTGG GGAAATACTC ATAATAATAC CGAGTGCTAA TCCTCCTAGT	6300
AAGATGAGAG GCAAGCTAGT AAAGCCAGCA ACTGATAAAA TGACCGCAAT CATACATGCC	6360
ATATATAGAG TGTGGTGCCC TGTTAAAAAA ATATATTTAA ATCGAGTAAA ACGAGCGATT	6420
AAGATATTGA ACACCATGCC TGCAAAACATA ATCATTGCAG TAGCTGAGCC ATATGTTGTT	6480
AAAGCTACAG CTACAATTGC TTCATTATTC GGCACAACGC CAGATAAATG AAAAGCATGC	6540
TCAAACATGG TACCAATGG ATTTAAAGAA TTTGTACAA TTCCTGCACC ACCAGATACA	6600
ACTAAGAAAC CAACAAAGGT CTTAATTCCA CCTTAATAA TATCAGGTAA TTTCTTCTTC	6660
TGAAGAACTA ATCCTAAGAT TGCAATTAAA GCTACTAAA TAGCTGGTGT ACTAACAATA	6720
TCCAATATGA ACTTCATCAT GACGCTAGCC TCCTATATAA GTCCTTTTTC TTCACAAAGT	6780
TTAGTAATTA ATTCTCGTAG TTCATCCATA TCAATAATAC TATTTAAGAT ACGAACATCT	6840
CCAAGATGAC TAGCTGAATC AGCTAGATCA CGACCAACAA TCCAAATATC AGCTGCATTT	6900
GGATCTGCTC CACCTAAATC ATAATGTTCA ACTTCTACAT CCGAAACATT CAAATCACTC	6960
AATACAGATT CAATATTCAT CTGTACCATA AAAGTTGAAC CTAATCCTGA ACCACAAGCT	7020
GTACCAATTT TTAACATTAT CTAATCCTCC TGTTTAATTA TCATTTTAAT GTCATCATAG	7080
TTTTTTGATG ATATTAAAGT TTGAACATGA TTTTATCTC TTAATAATTGT TGTTAAATGT	7140
GACAAAGCCT TTAAATGACT CTCATTATCA ATGGCTGCAA TACAAATCAA CAATCTTACC	7200

745

TCTTGTCTG GATTATCCAA TAAATAAATC GGTTCCTCCA AAACCTAACAT TGACATTCCT	7260
ATTTCATTCA CACCTTCATC TGGCCGAGCG TGAGGAATTG CTAATCCCTT CCCTAAATTA	7320
ATAAAAGGTC CAAACTCTTC TACTTTTTGA ATCATTGCCT CAGGGTAGTT CTCAGTTATC	7380
TTATCTTGAT CCAAAGCGG TTTAGCTGCT AAACGAATCG CCTCCTTCCA TCCTAATTTT	7440
TGCGAACTAA CCTGATAGGT TTCTTTGGTA ATAAGTTGTT CTAGCACTGG TACAATTTCC	7500
TTTCTATCAT TTTTTTGGTA AAGATAATTC TTTAACGCCA ATCTTAATTC CAATTCTTGT	7560
GTAATAATTC CATATCTTTT GACAATATTC AGGATTGTT CAATCTCAA ATCTCCATAC	7620
TCTAAATTCG GAAAATCTTT TAACACTAGT TCTACTAGTT GTATTGCTTG CTCTTCAGTC	7680
ATCATAACCG AAACCTAGATA ATTTGGCTTT TCTGTCTCCA CCTTTATGGT AGAAAAAAC	7740
ATATCATAGT CACTACTAGC TTTCACCTGT AAATCATCAA TCTTTGAGGT TCCTATAAAC	7800
TCAATTTGAG GAAATAATGC TAATAGATTC TCTTTTAACA TCAATGAAGA ACTAACACCA	7860
TTAGACAAA TGATTGCTGC TTTATACCAT TTTTGAGGCA AAGTATCTGC TTTCTTTAAA	7920
TAACCTCCGA AATGGATAAC AAAATATGCT GTTTCATAT CAGGTATGGG ATTGTCAATA	7980
GCGTCCATCA AGGGCATCAA AGAATCTTTG ACTAATTCAA ATAAATCAGG ATAATGTTCT	8040
TTAACATGCA ATACATATTC ATTTGAACTA GGTAGGCCGA ACTTTAATCT ATAGTAAGCC	8100
GGTATAAGGT GCGGGCGAAG ATTTTCTCTC AATCCTTCCC TTTGTTTAAA ATGTAACAAA	8160
GAAATATCTT CCATTCTACT TATAATAGCC TCTGTAAAT GATTAAAGTA AACCGGAGCA	8220
ACATCTACTT CACCTTCAA GCAACTTGAT AATAAACGG TGATATAGCG ATAATCATCC	8280
TCAGAAAACA CCGTATCTAT AATCCCAA TCAACCACTG TATCCAATAA AATAGTGGTT	8340
ATATCTTGAA TAACAGGAGA TACTAATGTC TCTGAAAGAC ATACTCTTTC AACATCCCTT	8400
TGATACCTAC ACAGAATGAA TACTAAACCG AAAAGGTAAA CTTTTAATTG ATTAACAATA	8460
GGTACTAGCT GTAGCTTCTC ATAATAATCT TTAACCTACCT GATCAATCAA ATCATAAGTT	8520
AATGAATACC CCCAACTGGA TAAAACATAA TCCAAACCCC AAATCCCTAT GGAGGATTCC	8580
AGCAACTCAC TAACCATTTG AAAAGCTAAG CGGTGCTTAT TCCACTCTGA ACCGTGTAAA	8640
GTATAACCTT TTGCTCTACT GTACCCTAGC TCCAAATCAT TATCTAACAT AATCTTTCTT	8700
AATGATTGAA TATCAGATAA GGTGTATTC TTAATCTACT TCAAAAAGTC TTGGTAATGA	8760
CTATTCGATA TAAATCTAA TCGGCAAAAA GTGTAAAGAT AGATTAAAGC TAAGCGAGTC	8820
GACTTTGGTA AAACCAATTC ATCCGACTTA ATAATATCTG TCAAAGACTG CTTCGTACGA	8880
TTTGATAAAC TATAGCGACC TTGCTTTTAA TCCAGCACTA TCCCTTTATT AGCTAGATAA	8940

746

GGCACTAAAT AATCTATTCC TTCTTTGACT TCCTTTATAG GTAAGCTCAC CTTAACAGAT	9000
AATTCATATA ACGATAGCTC ACAATGATCC ATCAAAGTCA TCAAAATAAC TAGTGCTCTA	9060
TAATCAAAC	9069

(2) INFORMATION FOR SEQ ID NO: 98:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 8654 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 98:

CGAGACAACA AGATGAAGAA AAATTTGCCC TATCGTTTGT GGCGCTTGCA AGTGTAGCAC	60
TTCTTGCAGC CTGTGGAGAA GTGAAGTCTG GAGCAGTCAA CACTGCTGGT AACTCAGTAG	120
AGGAAAAGAC AATTAAAATC GGGTTTAACT TTGAAGAATC AGGTTCTTTA GCTGCATACG	180
GAACAGCTGA AAAAAAGGT GCCCAATTGG CTGTTGATGA AATCAATGCC GCAGTGGTAT	240
CGATGGAAAA CAAATCGAAG TAGTCGATAA AGATAATAAG TCTGAAACAG CTGAGGCTGC	300
TTCAAGTTACA ACTAACCTTG TAACCCAATC TAAAGTATCA GCAGTCGTAG GACCTGCGAC	360
ATCTGGTTCG ACTGCAGCTG CGGTAGCGAA CGCTACAAAA GCAGGTGTTT CATTGATCTC	420
ACCAAGTGCG ACTCAAGATG GATTGACTAA AGGTCAAGAT TACCTCTTTA TTGGAACCTT	480
CCAAGATAGC TTCCAAGGAA AAATTATCTC AAAGTATGTT TCTGAAAAAT TAAATGCTAA	540
GAAAGTTGTT CTTTACACTG ACAATGCCAG TGAATATGCT AAAGGGATTG CAAAATCTTT	600
CCGCGAGTCA TACAAGGGTG AAATCGTTGC AGATGAAACT TTCGTAGCAG GTGACACAGA	660
CTTCCAAGCA GCCCTTACAA AAATGAAAGG GAAAGACTTT GATGCTATCG TTGTTCTCTG	720
TTACTATAAT GAGGCTGGTA AAATTGTAAA CCAAGCGCGT GGCATGGGAA TTGACAAACC	780
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AGCATCAAAC ATCTACTTTA TCTCAGGCTT CTCAACTACT GTAGAAGTTT CAGCTAAAGC	900
TAAAGCCTTC CTTGACGCTT ACCGTGCTAA GTACAATGAA GAGCCTTCAA CATTTGCAGC	960
CTTGGCTTAT GATTCAAGTT ACCTGTAGC AAACGCAGCA AAAGGTGCTA AAAATTCAGG	1020
TGAAATCAAG AATAACCTTG CTAAAACAAA AGATTTTGAA GGTGTAAGTGT GTCAAACAAG	1080
CTTCGATGCA GACCACAACA CAGTCAAAAC TGCTTACATG ATGACCATGA ACAATGGTAA	1140
AGTTGAAGCA GCAGAAGTTG TAAACCATATA ATAGAAAAAT GTTGAAATAG GGAATGAGCC	1200
TTTGACTCAC TCCCTGTTTC GATATTTAAT ACTCTTCGAA AATCTCTTCA AACTGCGTCA	1260

747

ACGTCGCCCTT GGATTATATA TGTGACTGAC TTCGTCAGTC TTATCTACAA CCTCAAAGCA	1320
GTGCTTTGAG CAACCTGCGG CTAGTTTCCT AGTTTGCTCT TTGATTTTCA TTGAGTATAA	1380
GAACCTATCA AAAAGTGAGG GAAAACCCTC GGAATTATAA ATAGAAAGAG TGAATCTTAT	1440
GCTCCAACAA CTCGTAAATG GTTTGATTCT AGGTAGTGTT TACGCGCTGT TAGCCCTAGG	1500
ATATACCATG GTTTACGGAA TTATCAAGCT CATCAACTTC GCCCATGGTG ATATTTATAT	1560
GATGGGAGCC TTTATCGGTT ATTTCTTGAT CAATTCTTTC CAAATGAATT TCTTTGTAGC	1620
GCTTATTGTA GCTATGCTAG CGACAGCTAT TCTTGGTGTC GTGATTGAGT TTCTTGCTTA	1680
CCGACCTTTG CGCCACTCTA CTCGTATTGC TGTTTGTGATT ACGGCTATTG GGGTTTCTTT	1740
CCTATTGGAG TATGGAATGG TCTATCTGGT TGGTGCCAAT ACCCGTGCCT TCCCTCAAGC	1800
GATTCAAACA GTTCGATATG ATTTGGGACC AATTAGCTTA ACAAATGTGC AGTTAATGAT	1860
TTTGGCCATT TCCTTGATTT TGATGATTTT GTTACAAGTC ATTGTCCAAA AGACTAAGAT	1920
GGGGAAGCC ATGCGTGCAG TATCAGTAGA TAGCGACGCG GCGCAATTGA TGGGGATCAA	1980
TGTAAACCGT ACGATTAGCT TTACCTTCGC TTTGGGTCT GCTCTTGCGG GTGCGGCTGG	2040
TGTTCTGATT GCTCTTTATT ATAACCTCTT TGAGCCTTTG ATGGGGGTTA CTCCAGGTCT	2100
TAAATCTTTC GTTGCCGAG TACTTGGTGG TATCGGAATT ATTCCTGGTG CGGCTCTTGG	2160
TGGCTTTGTG ATTGGTCTAT TGGAAACCTT TGGACTGCC TTTGGGATGT CAGATTTCCG	2220
TGATGCCATT GTTTATGGAA TCTTGTTGTT GATCTTGATT GTCCGCCAG CTGGTATCCT	2280
TGGTAAGAAT GTGAAAGAGA AGGTGTAAAC GATGAAGGAA AATTTAAAAG TTAATATTCT	2340
ATGGTTACTC CTTTGTGTTAG CTGGCTATAG CTTGATTAGT GTACTGGTTT CAGTCGGAGT	2400
ACTTAATCTA TTCTATGTAC AGATTTTACA ACAAATTGGA ATTAATATTA TTTTGGCTGT	2460
TGGTCTCAAC TTAATCGTTG GTTTTTCAGG ACAATTTTCA CTGGTTCATG CTGGTTTCAT	2520
GGCGATTGGT GCCTATGCAG CAGCTATTAT TGGTTCTAAA TCACCAACCT ACGGTGCCTT	2580
CTTTGGAGCT ATGCTTGTAG GGGCTTTGCT TTCAGGAGCA GTTGCCCTTAC TTGTCGGCAT	2640
TCCAACCTTG CGCTTGAAGG GGGACTATCT TGCGGTAGCA ACTCTGGGTG TTTCTGAAAT	2700
TATCCGTATC TTTATCATCA ATGGTGGAAG CCTTACAAAT GGTGCGGCAG GTATCTTAGG	2760
GATTCCTAAC TTTACAACCT GGCAAATGGT TTAATCTTTT GTCGTGATTA CAACCATTGC	2820
AACCTTGAAC TTCTTGCGTA GCCCAATTGG TCGTTCAACC CTCTCTGTTC GTGAAGATGA	2880
AATCGCTGCT GAGTCAGTTG GGGTTAATAC GACTAAAATT AAAATCATCG CTTTGTCTTT	2940
TGGTGCCATT ACTGCAAGTA TTGCTGGGTC ACTTCAGGCA GGATTTATCG GGTCTGTTGT	3000

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ACCGAAAGAT TACACCTTCA TCAACTCAAT CAACGTTTGT ATTATTGTTG TATTTGGTGG	3060
ACTCGGTTCC ATTACAGGTG CGATTGTTTC GGCATTGTGT CTGGGAATTT TGAATATGCT	3120
TCTCCAAGAT GTTGCTAGTG TGCATATGAT TATTACGCT TTGGCCTTGG TATTGGTAAT	3180
GATTTTCAGA CCAGGTGGAC TCCTTGGAAC ATGGGAACTG AGCCTATCAC GTTCTTTAA	3240
AAAATCTAAG AAGGAGGAAC AAAACTAATG GCATTACTTG AAGTAAAACA GTTAACCAAA	3300
CATTTTGGTG GTCTAACAGC TGTGGGAGAT GTGACTCTTG AATTGAACGA AGGGGAACTG	3360
GTTGGATTAA TCGGTCCAAA CGGAGCTGGG AAAACCACCC TTTTCAACCT TTTGACCGGT	3420
GTTTATGAAC CAAGCGAGGG AACAGTAACC CTAGATGGTC ACCTTTTGAA TGGGAAATCA	3480
CCTTATAAGA TTGCCTCTTT GGGACTTGA CGTACTTTCC AAAATATCCG TCTCTTTAA	3540
GATTTAACAG TTTTAGATAA TGTTTTGATT GCTTTTGGA ACCATCACAA ACAGCATGTT	3600
TTTACTAGTT TCTTACGCTT ACCAGCTTTT TACAAGAGTG AAAAGAATT AAAGGCTAAA	3660
GCTTTGGAAT TGTGAAAAT CTTTGATTGA GATGGTGATG CAGAGACTCT TGCTAAAAAT	3720
CTTTCCTACG GACAACAACG TCGTTTGGA ATTGTTCTGT CCCTTGCTAC GGAACCTAAA	3780
ATTCTCTTCT TAGATGAACC AGCAGCAGGT ATGAACCCAC AGGAAACAGC CGAATTGACT	3840
GAGTTAATTC GTCGTATCAA AGATGAGTTT AAGATTACAA TCATGTTGAT TGAACACGAT	3900
ATGAATCTGG TCATGGAAGT AACAGAACGT ATCTACGTAC TTGAATATGG CCGTTTAATC	3960
GCTCAAGGAA CTCCAGACGA AATTAAGACC AATAAACGCG TTATCGAAGC TTATCTAGGA	4020
GGTGAAGCCT AATGTCTATG TTAAAAGTTG AAAATCTTTC TGTGCATTAC GGTATGATCC	4080
AAGCAGTTCG TGATGTAAGC TTTGAAGTTA ATGAAGGAGA AGTTGTTTCC CTTATCGGTG	4140
CCAACGGTGC AGGTAAGACA ACTATCTTTC GCACCTTGTC AGGTTTGGTT CGACCAAGTT	4200
CAGGAAAGAT TGAATTTTGA GGTCAAGAAA TCCAAAAAAT GCCAGCTCAG AAAATCGTGG	4260
CAAGTGGTCT TTCACAAGTT CCAGAAGGAC GCCACGTCTT TCCTGGCTTG ACTGTTATGG	4320
AAAATCTTGA AATGGGAGCT TTCTTAAAGA AAAATCGTGA AGAAAATCAA GCTAACTTGA	4380
AGAAGGTTTT CTCACGCTTT CCTCGTCTTG AAGAACGGAA GAACCAAGAT GCAGCCACTC	4440
TTTCAGGGGG GGAACAACAA ATGCTTGCCA TGGGACGCGC CCTCATGTCA ACACCAAAAC	4500
TTCTTCTTTT AGATGAACCA TCAATGGGAC TTGCCCAAT CTTTATCCAA GAAATTTTGT	4560
ATATCATTCA AGATATTCAG AAGCAAGGAA CAACGGTCCT CTTGATTGAA CAAAATGCCA	4620
ATAAAGCACT TGCAATCTCT GACCGAGGAT ATGTACTGGA AACAGGGAGA ATCGTCCTAT	4680
CAGGAACAGG AAAAGAACTC GCTTCATCAG AAGAAGTCAG AAAAGCATAT CTAGGTGGCT	4740
AAAACAATCC AGTGGATTGT TTTAGTCGGC AGATGGAGAT TACGAAGTAA TCATCAATAT	4800

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AGTCCGGGGG ACCTTTT TAG TCGGTAGATT GAGATTGCAA ACAAATCTGC ATCTACATTG	4860
AAAGCTTAAT TTCTAATAAT TGAAAAATC GAATGAAAAA TTTCTTACCT TCATTACAG	4920
AGCTCGATTT CAGAGCTCTT TTTGCTAGCT TATTCATACT TTTCTGAATT TCGAAAAAGA	4980
AATGTAAGCG TTTGATAGAT TTACAAAAAG ATTGTATAAT AGGGATAAGA ATAGAAAAGG	5040
AGAAGTCTCA TGGCAGTTAA AGATTTTATG ACCCGCAAGG TAGTTTATAT TAGTCCAGAT	5100
ATAACAGTAT CTCATGCAGC AGATTTGATG AGAGAGCAAG GTTTGCACCG TCTGCCTGTT	5160
ATCGAAAAATG ATCAATTAGT TGGTTTGGTG ACTGAGGGAA CCATTGCACA AGCAAGTCCA	5220
TCTAAAGCAA CAAGTCTTTC TATCTATGAG ATGAATTATC TTCTGAATAA GACAAAAGTA	5280
AAAGATGTCA TGATTCGCGA TGTGTGCACT GTCTCAGGCT ATGCTAGTCT AGAAGATGCA	5340
ACTTATCTGA TGTGAAAAA TAAGATTAGT ATTCTCCCTG TCGTAGATAA CCATCAAGTA	5400
TACGGAGTTA TTA CTGACCG TGACGTTTTC CAAGCCTTTC TTGAAATTGC AGGTTATGGC	5460
GAAGAAGGGA TTCGTGTACG CTTTGTTACA GAAGATGAAG TTGGTGTCT TGGAAAAATT	5520
GTTCCTTTGA TTGTAGAAGA AAATTTGAAT ATCTCCCAT CAGTCAATAT TCCGCGTAAG	5580
GATGGTAAGG TGATTATCGA AGTGCAAATC GATGGATCAA TTGATTTACC AGCCTTGAAA	5640
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TTGTAGAAG GGAAGCCCAA AGGCTTCTTT TTTCATGAAA AGGGGATTAG AGCAAAAGAT	5760
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CTCTTTGACC TCGAAGGGCT AGAGGAAGAG ATTGCCATCT TGGAAAACAA GATGACAGAA	5940
CCTGATTTTT GGAACGATAA TATTGCGGCC CAAAAACGT CGCAAGAATT AAATGAATTA	6000
AAAAACACTT ACAATACCTT CCATAAGATG GAAGAGTTGC AGGATGAAGT CGAAATTTTA	6060
TTGGATTTTT TGGCTGAAGA CGAGTCAGTG CATGATGAAC TGGTAGCGCA GTTAGCCGAA	6120
CTTGATAAGA TAATGACCAG CTACGAGATG ACTCTACTCT TGTCAGAACC TTATGACCAC	6180
AACAATGCCA TCTTGAAAT CCATCCAGGT TCTGGTGGTA CTGAGGCGCA GGA CTGGGGT	6240
GATATGTTGC TTCGTATGTA TACTCGTTAT GGTAATGCTA AAGGCTTTAA AGTGGAAGTG	6300
TTGGATTACC AAGCAGGTGA TGAGGCTGGT ATTAAGTCGG TAACTTTATC ATTTGAAGGG	6360
CCTAATGCCT ATGGTCTCCT CAAGTCAGAA ATGGGTGTTT ACCGCTTAGT GCGAATCTCA	6420
CCATTTGACT CTGCCAAACG TCGCCATACC TCTTTCACAT CTGTAGAAGT GATGCCAGAA	6480
TTGGATGATA CTATTGAAGT GGAAATCCGT GAAGATGATA TCAAGATGGA TACCTTCCGT	6540

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TCAGGTGGTG CCGGTGGACA AAACGTCAAT AAGGTTTCAA CAGGTGTACG TTAAACCCAC	6600
ATTCCAAC TG GAATTGTTGT CCAATCAACA GTAGATCGTA CCCAGTATGG AAATAGAGAT	6660
CGTGCCATGA AGATGTTGCA GGCTAAGCTC TATCAAATGG AGCAAGATAA GAAGGCTGCG	6720
GAGGTAGATT CTCTCAAAGG TGAGAAAAAG GAGATCACTT GGGGAAGCCA AATCCGTTCT	6780
TATGTCTTCA CGCCTTATAC TATGGTAAAA GATCACCAGG CTAGCTTTGA GGTTGCTCAG	6840
GTAGATAAGG TTATGGATGG GGACCTAGAT GGTMTTATCG ATGCTTATCT CAAGTGGCGA	6900
ATTAGCTAAG ATAGAAAGGA ACTCACATGT CAATTATTGA AATGAGAGAT GTCGTTAAAA	6960
AATACGACAA CGGAACAACT GCTCTACGCG GTGTTTCGGT TAGCGTTCAA CCGGGGGAAT	7020
TTGCTTACAT CGTAGGACCT TCAGGAGCAG GGAAGTCAAC TTTTATTCGT TCTCTGTATC	7080
GTGAAGTAAA AATCGATAAA GGAAGCCTAT CAGTTGCTGG TTTTAATCTG GTTAAGATCA	7140
AAAAGAAAGA TGTCCTGCTT CTACGTCGTA GTGTTGGGGT TGTCTTCCAG GATTATAAAT	7200
TGTTACCAAA GAAACTGTC TATGAAAATA TTGCTTACGC TATGGAAGTA ATCGGGGAAA	7260
ATCGCCGTAA TATCAAAGA CGAGTGATGG AAGTTTGGG CTTGGTTGGA TTGAAGCATA	7320
AGGTTCTGTC TTTCCCAAAT GAACTCTCAG GTGGGGAGCA ACAGCGGATT GCGATTGCGC	7380
GTGCAATTGT AAATAATCCC AAAGTATTGA TAGCTGATGA GCCAACAGGA AATCTGGATC	7440
CGGATAATTC ATGGGAAATT ATGAATCTCT TGGAACGGAT TAACGTACAA GGAACAATA	7500
TTTTGATGGC GACTCATAAT AGCCAGATTG TAAATACCTT GCGCCACCGT GTCATTGCCA	7560
TTGAAATGG CCGTGTCGTT CGTGACGAAT CAAAAGGAGA GTATGGATAC GATGATTAGT	7620
AGATTTTTTC GCCATTTATT TGAAGCCTTA AAAAGTTTGA AACGAAATGG TTGGATGACA	7680
GTAGCTGCTG TCAGTTCAGT CATGATTACT TTGACCTTGG TGGCAATATT TGCATCTGTT	7740
ATTTTCAATA CAGCGAACT AGCTACAGAT ATTGAAAATA ATGTCCGTGT AGTAGTTTAT	7800
ATCCGAAAGG ATGTGGAAGA TAATAGTCAG ACAATTGAAA AAGAAGGTCA AACTGTTACA	7860
AATAATGACT ACCACAAGGT ATATGATTCT TTGAAGAACA TGTCTACGGT TAAAAGTGT	7920
ACCTTTTCAA GTAAAGAAGA ACAATATGAA AATTAAACCG AGATAATGGG AGATAACTGG	7980
AAAATCTTTG AAGGAGATGC CAATCCTCTC TATGATGCCT ATATTGTAGA GGCAAACACT	8040
CCAAATGATG TAAAACTAT AGCCGAAGAT GCTAAAAAAA TTGAAGGTGT CTCTGAGGTT	8100
CAAGATGGCG GTGCCAATAC AGAAAGACTC TTCAAGTTAG CTTCATTTAT CCGTGTMTGG	8160
GGACTAGGGA TTGCTGCTTT GTTAATTTTT ATCGCAGTTT TCTTGATTTT AAATACCATT	8220
CGTATTACCA TTATTTCCTG CAGTCGCGAA ATTCAAATCA TGCCTTGGT CGGAGCTAAA	8280
AACAGTTATA TCCGTGGACC GTTCTTGTTA GAAGGAGCCT TTATCGGTTT ATTGGGAGCT	8340

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ATCGCACCAT CTGTTTGGT CTTTATTGTT TATCAAATTG TTTACCAATC TGTCACAAA	8400
TCGTTGGTAG GGCAAAATCT ATCCATGATT AGTCCAGATT TATTTAGTCC GTTGATGATT	8460
GCCCTACTAT TTGTGATTGG GGTTCATT GGTTCATTGG GATCAGGAAT ATCCATGCGC	8520
CGATTCTGA AGATTAGGT AAAATAGCTG CTTTATGAG GAGATTGTAA AATCTCCTTT	8580
TTTGCTACAA GAGTTTTGA AAAGAGATGC GCAGAGAAA AGAGCTTCCA AAGAAGTCCC	8640
CCAGAGAAGA CTTC	8654

(2) INFORMATION FOR SEQ ID NO: 99:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19718 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 99:

TGTCGCGTCA AAATCATTAC TATGGCTATG TATAGCCCTT ACTATGACTT GGCTAAACAC	60
GTTTCGCTTTC AAATTTCTAG GCTCAGGCTG AACAGTCTC CCAGGCTGTT CACTCCCGAA	120
TGCTAAAATC GTTCTTGATC GCTTTCACAT TGTACAACAT CTTAGCCGTG CTATGAGTCG	180
TGTGCATGTC CAAATCATGA ATCAGTTTCA TCGAAAATCC CATGAATACA AGGCTATCAA	240
GCGCTACTGG AAATCATTAC AACAGGATAG CCGTAACTG AGTGATAAGC GATTTTATCG	300
CCCTACTTTT CGCATGCACT TAACAAATAA AGAAATCTT GACAAGATTT TAAGCTATTC	360
AGAAGACTTG AAACACCACT ATCAGATCTA TCAACTCTTA CTTTTTCACT TTCAGAACAA	420
AGACCCTGAG AAATTTTTCG GACTCATTGA GGACAATCTG AAGCAGGTTC ATCCTCTTTT	480
TCAGACTGTC TTTAAAACCT TTCTCAAAGA TAAAGAAAAG ATTATCAACG CCCTTCAACT	540
ACACTATTCT AATGCCAAAC TGGAAGCGAC CAATAATCTC ATCAAACCTA TCAAGCGCAA	600
TGCCTTTGGT TTTGAAACT TTGAAACTT CAAAAACGG ATTTTATCG CTTTGAACAT	660
CAAAAAGAA AGGACGAAAT TTGTCCTTTC TCGAGCTTAG CTGACTTCAA CCCACTACAG	720
TTGACAAAGA GCCTAATTTT CATAAAATTT GACATGGAAA TTATAAAACC ATTACTAGTT	780
TAGTCCTTTT TGATAACGTG CCAATTCGGC TTGGTTCGCC CAAACATAGT GACCTGGACG	840
GATTTCTACC ATAGATGGCT TATCAGTCTC ATAGTCGTGT TGACTTGGAT CGTAAACCTT	900
CAAGACCTTC TTACGTTCCTA AGATTGGATC TGGGATTGGT ACCGCTGAAA GCAAGGCTTG	960
AGTATATGGG TGAATTGGAT TGTAAACAA TTCTTCTGTT TCTGCAACCT CTACAATAAC	1020

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ACCCTTGTA	ATAACTGCGA	TACGATCTGA	AATAAAGCGA	ACAACCGACA	AGTCATGGGC	1080
GATGAAGAGA	TAGGTCAGGC	CGAGCTCTTT	TTGGAATTTT	TTGAGCAAGT	TCAAGACTTG	1140
GGCACGTACA	GAAACGTCCA	AGGCTGAAAT	TGGCTCATCT	GCAATAACAA	AGTCTGGTTG	1200
CATGACCAAG	GCACGGGCAA	TACCGATACG	TTGACGTTGA	CCGCCTGAGA	ATTCATGAGG	1260
GTAACGAGTC	AAGTGCTCAG	CAAGAAGACC	TACTTCACGG	ATAATATTTT	GAACCTTCTC	1320
TTTACGTTCT	TCTTCATCCT	TAAATAAACG	GTGATTGTAA	AGACCTTCAG	AAATAATATA	1380
ATCAACAGTC	GCACGTTTAT	TCAAACCTGC	GGCAGGGTCT	TGGAAAATCA	TCTGGATTCTG	1440
ACGAATCAAT	TCCGCAGCTT	GTTACGCGA	TTTCTTACCA	TTAATCTTTT	GACCATCAAA	1500
AATGATATCT	CCATTACTTG	TATCATTTAG	ACCGATGATA	GCACGACCAA	TAGTTGTTTT	1560
CCCACTACCG	GACTCACCTA	CAAGCGAGAA	AGTTTCTCCC	TTGTTGATAA	AGAAGTTAGC	1620
ATTTTAAACC	GCGACAAACT	TCTTACTTCC	TTACCGAAG	GAAATTTCTA	AATCTTTGAT	1680
TTCTACTAAT	TTTTCAGACA	TTTCTTCTCT	CCTAGTCAGC	CAGATGGGCA	AATCCCATTT	1740
TTTCACGGAT	CTTATCATGG	AGATTTGCAA	TCACAGCTGG	TTTTTCTACT	TTCGGAGCAT	1800
CCTCATGAAG	AAGCCAAGTT	TTAGCCCAAT	GTGTCTCTGA	TACTGAGAAT	TGAGGAGCTT	1860
TTTGTTGCAA	GTCAATCTGC	ATGCGTAGT	CAGAACGCAA	GGCAAAAGCA	TCCCCTTTCA	1920
GGTCAGTATA	AAGTGACGGA	GGTGTTCCTG	GGATTGAGTA	AAGATCCCCT	TTATCATCAG	1980
CAAGCTGAGG	CAAGCTAGAC	AAGAGACTCC	ATGTATATGG	ATGGCGAGGG	TCATAGAAGA	2040
CTTCTCAAC	CGTTCCATAC	TCAACGATTT	CTCCTGCATA	CATAACCGCT	ACCTTATCCG	2100
CAATACTTGC	CACCACACCA	AGGTCGTGGG	TAATAAAGAT	TGTTGTGAAA	TGATACTCGT	2160
TTTGTAAGA	TTTGTAGCAA	TCAATAATCT	GAGCTTGAAT	AGTTACATCC	AAGGCAGTTG	2220
TTGGCTCATC	ACAGATCAAG	ACATCAGGTC	GGCAGGCAAG	GGCAATAGCA	ATAACGATAC	2280
GTTGACGCAT	TCCTCCAGAA	TATTGGAATG	GGTATTCATT	AAAACGTCTA	TCTGCGTCTG	2340
GAATGCCAAC	CTTATTCATG	TAGTCAATGG	CCAATTCTTT	CGCTTCTTTA	GCTGTTTTC	2400
CTTGGTGTTT	TACAATAACT	TCTGTAATCT	GACTACCAAT	TGTTTTAATG	GGGTCCAAAC	2460
TAGTCATTGG	GTCTCGAAG	ATAGTCGCAA	TCTTAGCACC	ACGAATTTGT	TCCAATCCT	2520
TGTGAGAAGA	TAAAGCTGTC	AAGTCCTGAC	CACGGTAGTC	AATACTACCT	TGGGCAATAC	2580
GACCATTTTC	TTGAGCATA	CCTGTGAAGG	TCTTTGTCAA	AACAGATTTA	CCTGATCCTG	2640
ACTCACCTAC	CAAGGCTAAT	ACTTCTCCTT	CGACTAGTTC	AAGGGAAACG	CCGCGAATGG	2700
CTGTCAATAC	TTTGTACGA	ACGTCAAATT	CCACGACAAT	ATCGCGAGCA	GTCAAAATTA	2760
CATTTTTTTC	TTTTGTCAAT	TCTACTCCTA	TCTATGTGTA	CGTGGATCAC	TAGCATCCGC	2820

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TAAGTTTGA CCAACTACGA AAAGGGACAA GGATACCAAG ACAAGGTTG TCAATGGAAT	2880
CCAGAACAAG TAAGCATTGG TTGTTACGTT TTGTGAATAA TCCGAAATCA AACGACCCAA	2940
ACTTGGCACT GTAATCGGTA ATCCAAGACC GAAGAAAGAC AAGAAGGCTT CGTATGAGAT	3000
AAAGCTTGGA AGCATTGAG TCATGGTGT CACAATAACA GATACCAATT GAGGCATGAT	3060
ATTTTGGCA ACAATCTTCA AGGTTGGTGT TCCCAAAGTA CGTGACGCCA AGTTGTATTC	3120
CAAGTCACGA TAGCGCAAGA TTGTCACACG GATCATGAAG GCAATACCAA TCCATGTTGT	3180
TACGCTCATG GCAAAAATCA GATTCCAGAA TCCAGCTCCG ATTGAGTAAG TCAAGACAAT	3240
AACAATCAAA AGAGGTGGGA TGTTTGAGAT GACGTTGTAA ACTTCCATCA TGACACGGTC	3300
AACTGATTTT GAAATACCCC AAATACCACC GACAAAAACA CCGATAACCA AGTTAATCAC	3360
TGTCGCAATC ACAGAAATGA GGATGGAGTT ACGAGCTCCG AACCAGACAC CGTCAAAGAG	3420
CGATTTACCG TTACTGTCAG TACCGAACCA ATGCTCCGCA TTTGGCTTGA TATAACGAAC	3480
ACTAAAGTCG TTTACCTTGC TGACATCATT GAAATCAAAC TTAGAAAACA TTGGGTAGAT	3540
GAAACTTATC AAAATGATGG CTACCAAGAT TCCCAACATG ACTACAGTTG ATTTTTCTT	3600
CATAAATGT TTAACACTG ATTTCCAGTA AGAATATGCT GGCGCATCAA TAGTTTCAGA	3660
GGCAAAATCG TCACGTTTAA CAACTGAAA TTTTCTTTA TCGATTGTAG ACATTATTTG	3720
CCTCCTTTCT CAGTCAATTT AATACGTGGG TCAATAATAG TCATCCAAAT ATCTCCCAA	3780
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TCAGTAAGGG TTGCACCACC GATAACCCCA ATAATGGCAG CAGGAATTCC TGAAACCAGC	3960
GGAACCATGG CATTTTTAAA GATGTGTTTG TTTGAAATTT CTTTTTCAGA CAAACCTTTT	4020
GCACGAGCGA AACGAACAAA GTCTTGAGAT TGCAAGTCAA TCATGTAACG ACGAATCCAA	4080
ATGGCTGTAC CAGGAGCACC CAACAAACCA AGGATGACTG CTGGTAAAAC GTAAGAACGC	4140
CAATCTCCAG CTCCAAGAT AGGGAATGAA TCTGGAAGGG CAATAGATGA TCCAATCAAT	4200
CGAACGATGT AAACCAAGGC AATCGTTGGA AGAGCAAGCA AGAAGGTCAA AGCCCCTGTT	4260
GAGAGGCTAT CAATCCAAGT GTTCTTGAAA CGAGCCATGG CTGAACCAAG TGGCACGGCA	4320
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GGATATTGGT AATTACTTTC AGTCGCTGTA TAAGGATCAT CTTTCCATA GCTAGCTACT	4440
TCACGAGAGT CAGCCTGACT AGGTGACTTG TAGGTTCTTG AGTAAATATT TACAGAAGAC	4500
GTTTCTTAC CTGTTGGGAA CTGAACCTGG GCAGTTTGG TTTGTCCTTG ACCTTGAGTA	4560

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ATAACCTGAA GAACTGGTGT ATTAGCATAG GTTGGGTAAG AGTCACCTAA ATTCAAGTTC	4620
ACAAAGTTTT GATGAACAAA TGGGAACTGA CTGTTAAAGT ACAAGAGATA TTTATGTTTA	4680
GTTCCTGAAC CGACCAATGA CCATCCGATA GCTGGATCAT TTTCAAAACG AAGGTAGCGT	4740
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GCATAGAAGT GAAAAACACG TTCAAAAATT GGAATTTTAC GAGTAGCATA GAATTGACCA	4860
CTTTCAGTAA ATTCTCCCAA AGTCCAACCA TGACCTAATT GATTGATGTA CTTTTCATAA	4920
ATAGCTTTAT TGGTCGCATT TGCTTCTACT GTTACAGAAG AATCCATGCT ACTTGCCTTT	4980
TCTTGCAACT CTTTAGTATC GTAATACTCA ATGTAGCCCA TACGCTCAAA CACAGTATTT	5040
TCATAGTTAT CAGCTTTATC AGCCGTTGTC GCAATTTTAT TATAGTTAGG ATCCTGCTTG	5100
AAAATCAATT TTCGAGGAAC CAAGGTATAG ATAATCGTGT AGGTCAAAGT CGTTACTAAG	5160
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TTAAAAATCC CAAAAGAACC TTCTCCTCAT GGAGAGAAAG TTCTATTAGA AATTATTTAC	5280
TTACATGAC TTGCCAATTC TTTTGTAGCT TTCTCATTG ATTCAGCTTT TTCTTTCAAC	5340
CATTTTTCAC GAGCTTTTTC ATACTCTTCC TTAGTCACCA CTTTATCTTG TGATTTCAAA	5400
TATTTGAAGT AAACATCTGA CCCCTTAGAG CCTGTTTGGC CAGAAGCTCC AGTAAATGGA	5460
ACAATTCGTG AAAGCACTGG TGCTGCACCA GAAGAAGCCA TAGCAGGAAT AAAGAGTGAA	5520
CTATCTGTCA ACCATGCTTG AGCCGCTGCA TATTTTTCAT AACGGACATT CAAGTCGCTT	5580
GTCTCTCTGG CAGCTTCATC AACTAATTTA TCGTATTCTT TCAAACCAAC TTGAACTACT	5640
GAAGGGCTAT TTGGATTATC AAATCCTAAA TATGTTTTTG TAGTTTCACT GCTAGTTGTT	5700
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TCACTTGTC TTTGTTGAAT ATCAACAACG ACATTTTCAA CACCAAGAAC TGTTCCTACA	5880
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TCCAGATGAA TAGGAACTG AACGCCGTCT GCTTCTAAAG CTTTCTTAGC TTTGCGAAAC	6000
TCTGCCTTGG CCTGTGCAGC ATTGAATAAA CCATCCTGCC CATCAGCTAA ATTACACCT	6060
TTCCACTCAT CACCATAAGC AGGAAGTTGA GCAGCGACTA AATCACCAAA GGTCTTCTCA	6120
CCAGCTGAAA CAAAGTCTGG TTTTACAAAT AAATTACGAA CTGCTAAAGC TGCTCCATCT	6180
TTACCATTGA TTTGAGCTGA GTAAGCTGAG CGATCAAGAG CAAAATTCAA GGCTTGACGG	6240
AAATCTTTGT TAAGCAATGC CTTCTTAGTA GCTACTTTCT CTGAATCTGT AGTTTTAGAA	6300
GTATAGTTGT AACTTTGGCG ATCAATATTC ACACCCAGAC CAGCAATCCC AGAGCCTGAT	6360

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TGTGTGTAAT AGATATTGTC CTTGTATTCT TCTGCAACCT TAGAATAGTT GGAGCTGGTA	6420
GGGTAAAGAC GGGCATAACT ATAAGCTCCA CTAGTGAAGT TACGCTCTAG CGACTCCTGA	6480
TCTGATCCAT CATAGTAAGC TAGATTGATA GTATCTAGGT GGACATT TTC TTTATCCCAA	6540
TATTGCTCAT TTTTACAAA CTCTACAGAA GATTTTGAG TCAACCCTT CAACAAGAAT	6600
GGACCATTAT AAAGCAAGGA TGTCGGATCT GTTGGTTTAG CAAAATCGCT TCCTTTTGAT	6660
GTTTCGAATT CTTTCATTCAG AGGCCAGAAA ATAGAATAGG TCAACTTAGA GTTCCAGAAC	6720
GGTTCAGGCT GGTTCAAAAGT GTATTGTAAC GTATAATCAT CAACCGCCTT GACACCAACT	6780
GTTGAAAAAT CTGTGAAGT TCCTGATAGA TAATCTGCCA AGCCTTTAAC CGAATTTTCA	6840
GCTAAATACA TAGCTTCTGA TTTTATCTCT GCTGCGTGT TTAACCGTT CACGAAATCT	6900
TTAGCCGTCA CCTCTGCATA TTCTTCTCCA TCAGAGGTAA ACCATTTAAC CCCTTACGA	6960
ATCTTATAAG TGTAGGTCAA ACCATCCTTA GAGACTTCCC AATCCTCTGC AACTGCAGGA	7020
GCAAGATTAC CGTAATTATC GTTAGTGAAT AAACCATCAA TCCCATTGTA AGTCACTACT	7080
GTTGTACTAT TTTTACTTGA AATCAGGTAG TCCAAGGTTT CTGGGTCTGC TGTATAAACA	7140
TAGCCATAAG CTTTAGGGGC TGATGAATCA GATGATTTTG AAGAACTGCA TGCTGCAAGT	7200
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TACTCCTCTG TTTATGTGAA TTATAGATTG ACAACCATTA TATCACATTA TCCATTAAAA	7320
ATCAAACAAA TTTTCAGAAT ATTTAGGCTT GTTGGCACAA ATTTTTCATT TTTTGTGAAT	7380
ATATGATTCA AATTGTCGTT CGAAGTGTC AAGACTACAG TGAAATAGG AAATTTGACG	7440
CAGAACTTT GGAGTTTAGG AAGACATACA GTAAATGAA ATACGGACGG AACAATGTGA	7500
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TCAGTTTACT ATGTCTTTTC ACACCAACCT TATCCCGAAT TCAATTACTT TTGTGATTTA	7620
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TGCTCCTCGC TATCACGTTT CTATTCATAG CCTACGATTT CACTATTGCT TTCTCTGACA	7740
ATTCTTATTT CCTGCGTCAG ACTTAAAACG ATCTATCCCC AGACCATTTT AATCCGCTAC	7800
CTCACGATAG TCAGGCTTGG GGAGCGCTAT TGTATTACC GGTAGTGGAG CCCTACAGAG	7860
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TTTCATGGAT AGCTGAAATC AGACTTTCTA GACTTCCACC CAGTTTTTCC TCATTAACAA	15180

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CCCAATCACC TAAAGCACGA TTATCATCAA AACGATTGCC AAACCAACCA TCATCTAATA	15240
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TGACCCATTG ATTAAGAGTC AATTGCTCTA CCAACTGAGC TAACGAGTCT AAAATAACTT	19680
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(2) INFORMATION FOR SEQ ID NO: 100:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 4117 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 100:

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CTCAGCTAGC TTATCTGGGA GATGAACTAG CAGCTTTTAT CCACTTCGGT CCTAATACCT	360
TTTATGACCA AGAATGGGGG ACTGGACAGG AGGATCCTGA GCGCTTTAAC CCGAGTCAGT	420

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CTCTCGAGGA GTTGGTCGAA ATCTACTTTC ACTCAGTAGG GCGAGGAACT CCACTCTTGC	1140
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TTCATGTGCA AGTAGAGGTG GATGGTGTCT GGCAGGAGTT TGGTTCGGGT CATACTGTTG	1500
GTTACAAACG TCTCTTACGA GGAGCAGTTG TTGAGGCACA GAAGATACGT GTAGTCATTA	1560
CAGAATCACA GGCTTTGCCT TTGTTGACCA AGATTTCCTT TTATAAACT CCTGGATTAT	1620
CAAAAAAAGA AGTTGTTTCA GAACTAGCAT TTGCAGAAAA AAGCCTAGCT GTGGCAAAGG	1680
GAGAAAATGC CTATTTTACA GTTAAGCGCA GAGAATGTAG TGGTCCTTTA GAAGCTAAGA	1740
TTTCGATTCA ACCGGGGACA GGTGTCCATG GTGTCGCCTA TCAGGATGAG ATTCAAGTCC	1800
TTGCGTTTCA AACTGGTGAG ACTGAAAAAA GTCTGACGCT ACCAACCTTG TATTTCCGAG	1860
GAGATAAAAC CTTGGATTTT TATCTGAACC TAACGGTGGA TGCTCAGCTT GTGGATCAAC	1920
TTCAAGTCCA AGTTTCATAA AAGAAGAACC TTTGCGCGAT GCAAAGGTTT TTTTGGTTAT	1980
TAGTGACTTG GTAACCAGCT GAGGGTGAAG GTTAGTTGTT CAGCTTTTAA GAGGTCTTGG	2040
TGTTGAATAG TTGATACGAG TGTTTTGTCC AGTCGGCATT CTTTGACAAA GTTAAATGG	2100
TTGTGGTTTT GTTTAGTATG GATATCCAGC CATTTATCTT CTTTAGCGAG GTAGACTCGT	2160

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AGATGGTCAA AGAGAGGGAT TCCGAGGTCA TAGCTTGGTT TTCCTGGACA GGTGGATAA	2220
AATCCGAGAG CTGACCAGAT GTACCAAGCA GAGAGACTAC CATTTGTCTTC ATCTCCAGGA	2280
TAGGCTTTCC AACTTGGGTG AAAAGCTTTC TGACGGAGCG TCTTGATAAG AAGGGCAGTG	2340
TAGTCAGGGT AATCGCTGTA ACGGAAGAGA TAAGGAATGT GGAAACTAGG CTGGTTGGAA	2400
ATGGCTATTT GTCCAAAAGG AGCAGTAGCC ATCTCGCTCA TTTCGTGAAT TTCGTAACCA	2460
TAGCCTGTTG TTTCAAAGAG GGGAGCATCT TGACAGGCTT TCAAAGATA GTTGCTAAAG	2520
GTTTCTTTTC CACCCATCAG TTGGATTAAG CCAGGGATGT CGTGGAGAAC GCCTAAAGTA	2580
GCTTGAATGG CAGAGCATTC AGCGTAGTCT CGCCCCAAC TATAAGGAGA GAAGTCAGGG	2640
TGAAAGTTTC CTTGATTGTC TCGTGCTCGC ATGTAACCTG TCTCAGCGTC AAATAGCTGG	2700
CGGTAATTTT GTGAAGCAGC CTTGTAGGTT TCAGCGATTT CTATGTTCTC TAGTTTTTTG	2760
GCACAGCTGG CGATACAAA GTCACTATAG GCATAGTCTA GAGTATGGCT AACACTTTCG	2820
TGGTGGTCGG TAGAGAGGTA ACCTAGTTCT TGGTATTGGG CTAGTCCGTG GCGGCCATTG	2880
ATGCCGAGAG GGTGGGCTTT GCTGGCTGTT TCGAGCATGG CTTGGAAGAG TTCTCCTTCT	2940
AGGTCGGGGG TCATGTCCTT GCAGGCGCTA TCTGCGATAA TACCGTCTAA AAGGTACCT	3000
GGCATCATAC CCCGTTTCATC TGGAGCCAGC CATTTTGGA GGAAACCACT ATCGCGGTAG	3060
CTATTGAGGA AACCTTCTAA AAAGCGTTGA TAGTGTCTCG GTATGATAAG GGCAAAGAGG	3120
GGGAAGGTGG TGCGGAAGGT ATCCCAGAAA CCATTGTTGC TAAAGAGGAC ACCAGGCTTG	3180
ACAGTACCAG TAGCCAGATC CATGTGGATG GCTTGCCCTG ATTCATTAAT CTCATAAAAA	3240
GTCTGTGGGA AGAGGAAGAG TCTGTAGAGG CAGTGGTCAA AGAAGGTTTCG GTCAGCCTCT	3300
CCTGTCTCTA TAATGTCAA ACGATGGAGG AGATTTTCCC AATCCACTTG GGCACCTGAT	3360
TTACAGCTAT CAAAATCTTC TTGAGGTAGA TTGATTAGAG CTTGAGAAGG AGAGATGAAA	3420
GAAGTGGCTA GTTGCATCTC GGTTTGACTA CTTGCTAAGT CAATTCGCCA GTCTCCAGCT	3480
TCTTGGCTGA TAGCAAGAAT ATCCGTGTTT ATTTGCAGGG CAGTGAACAT CGTTAGCGAA	3540
TTTTTGTAG TTTCAGTTT ACCTTCTTGT CGCAGGGCAA GAGTCCGCTT ATCTACTTGC	3600
TCTACTGTCA GTTCATCTGC TGCCTGAAGA TAGAGGGAGA GGGCTTTGCC TTGCTTTTGA	3660
TTCAAACGAA TAGAAGCACC ATAGCAAGTC GGTGTGAGCT GGGTTTCAAT CTGATAACGC	3720
AGAGAAAAGA GCTTCAAATA GTGAGGCTGG AAGCAAGCTT TATCTATATC ATAAGAAGAC	3780
TGGCGGTGAA AGAGGCTGTC TCCCCCAGT TGAAGGTGA CAGGTGTCAG AAGGAGCCAA	3840
GAGTAGTCCC CAATCCAAGG ACTGGGCTGG TGAGTTAATC GAATCCCCTG AAAGATAGGC	3900
AGATGTGGAT CAAAAACCA AGATCCATCC TGGTCACTGG TCTGGGGCAC AAAGTAATTC	3960

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ATCCCAAAG GCACGCCTGT GTATGGCAGG GTATTTCCCC GAGAAAAGGC ATGCTTGTG	4020
GTAGTTCCAA AACGGGTATC GATGGTATCA AGTAGTGGTT TCATAGTCTT TCCTTTAGCT	4080
GTTTTTCTAC ATTATATCAG TAATAGAGGG CCTTTAG	4117

(2) INFORMATION FOR SEQ ID NO: 101:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2727 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 101:

CTGGTTCAAT TATTATTCAC TCTAAGTAGT CATATGTTCT TTATTTATGT GAGTTTCTAC	60
CTTTTAAAGG ATCTTGTTAG ATGGGAGAAG GTTTTAAAAG TGACAGATGA TAATACAAGA	120
AAAGTTCGTT TATTAGTAGC CTTTTTTAGC ATTGTCATAG GCTACATCCT GAGTCTTTTC	180
TTTATTAGCC TGTATCATTT GTGGCAAGAA GCGCTTAGAG GATTATTATG AAATCAAGAG	240
TAAAGGAAAC GAGTATGGAT AAAATTGTGG TTCAAGGTGG CGATAATCGT CTGGTAGGAA	300
GCGTGACGAT CGAGGGAGCA AAAAATGCAG TCTTACCCTT GTTGGCAGCG ACTATTCTAG	360
CAAGTGAAGG AAAGACCGTC TTGCAGAATG TTCCGATTTT GTCGGATGTC TTTATTATGA	420
ATCAGGTAGT TGGTGGTTTG AATGCCAAGG TTGACTTTGA TGAGGAAGCT CATCTTGTC	480
AGGTGGATGC TACTGGCGAC ATCACTGAGG AAGCCCTTA CAAGTATGTC AGCAAGATGC	540
GCGCTCCAT CGTTGTATTA GGGCCAATCC TTGCCCGTGT GGGTCATGCC AAGGTATCCA	600
TGCCAGGTGG TTGTACGATT GGTAGCCGTC CTATTGATCT TCATTTGAAA GGTCTGGAAG	660
CTATGGGGGT TAAGATTAGT CAGACAGCTG GTTACATCGA AGCCAAGGCA GAACGCTTGC	720
ATGGTGCTCA TATCTATATG GACTTTCCAA GTGTTGGTGC AACGCAGAAC TTGATGATGG	780
CAGCGACTCT GGCTGATGGG GTGACAGTGA TTGAGAATGC TGCCCGTGAG CCTGAGATTG	840
TTGACTTAGC CATTCTCCTT AATGAAATGG GAGCCAAGGT CAAAGGTGCT GGTACAGAGA	900
CTATAACCAT TACTGGTGTT GAGAACTTC ATGGTACGAC TCACAATGTA GTCCAAGACC	960
GTATCGAAGC AGGAACCTTT ATGGTAGCTG CTGCCATGAC TGGTGGTGAT GTCTTGATTC	1020
GAGACGCTGT CTGGGAGCAC AACCGTCCCT TGATTGCCAA GTTACTTGAA ATGGGTGTTG	1080
AAGTAATTGA AGAAGACGAA GGAATTCGTG TTCGTTCTCA ACTAGAAAAT CTAAAAGCTG	1140
TTCATGTGAA AACCTTGCCC CACCCAGGAT TTCCAACAGA TATGCAGGCT CAATTTACAG	1200

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CCTTGATGAC AGTTGCAAAA GGCGAATCAA CCATGGTGGA GACAGTTTTC GAAAATCGTT	1260
TCCAACACCT AGAAGAGATG CGCCGCATGG GCTTGCAATC TGAGATTATC CGTGATACAG	1320
CTCGTATTGT TGGTGGACAG CCTTTGCAGG GAGCAGAAGT TCTTTCAACT GACCTTCGTG	1380
CCAGTGC GGC CTTGATTTTG ACAGGTTTGG TAGCACAGGG AGAAACTGTG GTCGGTAAAT	1440
TGGTTCACCT GGATAGAGGT TACTACGGTT TCCATGAGAA GTTGGCGCAG CTAGGTGCTA	1500
AGATTCAGCG GATTGAGGCA AGTGATGAAG ATGAATAAGA AATCAAGCTA CGTAGTCAAG	1560
CGTTTACTTT TAGTCATCAT AGTACTGATT TTAGGTACTC TGGCTCTAGG AATCGGTTTA	1620
ATGGTAGGTT ATGGAATCTT GGGCAAGGGT CAAGATCCAT GGGCTATCCT GTCTCCAGCA	1680
AAATGGCAGG AATTGATTCA TAAATTTACA GGAAATTAGG CTGGAGAACC AGCCTTTTTC	1740
TAAAGATAAG GAGAAATATG AACAAAAA CAAGACAGAC ACTAATCGGA CTGCTAGTGT	1800
TATTGCTTTT GTCTACAGGG AGCTATTATA TCAAGCAGAT GCCGTCGGCA CTAATAGTC	1860
CCAAAACCAA TCTTAGTCAG AAAAAACAAG CGTCTGAAGC TCCTAGTCAA GCATTGGCAG	1920
AGAGTGTCTT AACAGACGCA GTCAAGAGTC AAATAAAGGG GAGTCTGGAG TGAATGGCT	1980
CAGGTGCTTT TATCGTCAAT GGTAAATAAA CAAATCTAGA TGCCAAGGTT TCAAGTAAGC	2040
CCTACGCTGA CAATAAAACA AAGACAGTGG GCAAGGAAAC GTTCCAACC GTAGCTAATG	2100
CCCTCTTGTC TAAGGCCACT CGTCAGTACA AGAATCGTAA AGAAACTGGG AATGGTTCAA	2160
CTTCTTGGAC TCCTCCAGGT TGGCATCAGG TCAAGAATCT AAAGGGCTCT TATACCCATG	2220
CAGTCGATAG AGGTCATTTG TTAGGCTATG CCTTAATCGG TGGTTTGGAT GGTTTTGATG	2280
CCTCAACAAG CAATCCTAAA AACATTGCTG TTCAGACAGC CTGGGCAAAT CAGGCACAAG	2340
CCGAGTATTC GACTGGTCAA AACTACTATG AAAGCAAGGT GCGTAAAGCC TTGGACCAAA	2400
ACAAGCGTGT CCGTTACCGT GTAACCTTT ACTACGCTTC AAACGAGGAT TTAGTTCCCT	2460
CAGCTTCACA GATTGAAGCC AAGTCTTCGG ATGGAGAATT GGAATCAAT GTTCTAGTTC	2520
CCAATGTTCA AAAGGGACTT CAACTGGATT ACCGAAGTGG AGAAGTAACT GTAACCTAGT	2580
AAAAGATACG CCTACACTCC TATGTCACTT ATGGATGTAG GAGTCTTTT TACTAGTTTA	2640
AGCAGGACTA AGACAGGTAC TAAGACAAAA TAGCAACTTC TAAACTAAC TTCCAGTTT	2700
GGGAGAGAGA TGGAAGTTAC TTTGAGA	2727

(2) INFORMATION FOR SEQ ID NO: 102:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 5717 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 102:

TTTTTTGTAG ATTTAAGTGG GGTGCAATTC CTAATAATA AAAACAATT TTTGAAAATT	60.
ATGTTAGCAG GAATTGCTTC AAATTCGATT TTATCACTTA CAGGTTTACT TGTTTTATTG	120
TTCACATCGT ATAAATTGCT TGGACTCTTA TTTTATCA TTAACCTAGG TATGATTTT	180
ATTAATTCAA TTCCTTTTTC TCAGTATGAT AGTGGTATTA TTTTAAGATA CTTGAATTCT	240
AACAATAATA ACTTGAATT TCAATATATA GTTCAACTTT TAATAGCATT TGTATTATT	300
TATTTTCCTT TGAGTCAACT ATTACAGTTT TTGACACCCA ATATTATTGT TCGTAGTATA	360
GGAGGGTGG TTGTTCTAT ACTGCTTCT ATATTATATA TGATAGGAAG GACGAAATAT	420
GTTCTACGTA AATAGTTATG TTTTGCTTA TAAAAAGAA GGTATAATGT ATTTACGTGG	480
TCGGAGTATG CGGAAATAG CTATAGAACC TCAATTTTCG CAAGAATTTA TCAACGATCT	540
ATTTAATAGT TGTAAGGAAC TATTAGAGAT AGAAGAAGTA TTAGGCAGTA AACTAACATT	600
TGAACTATAA ATGAACAAAT TTTAATTTTCG GATGAGATAG ATATTGATAG TAGATATTCT	660
AGAACTAAAG GTTACTATTC GTTATTTTAT AATGAAGAGT ATAATAAAAT ACAGAATAAA	720
ACAGTATTAG TATTAGGAGC AGGAGTCTTA GGATGTTATA TATCTCTAAG TCTAAGTATG	780
TATGGAGTGA GGAACTTAT TGTCGCTGAT TACGATATAA TAGAACCATC AAATTTAAAT	840
AGGCAAATTC TTTATACAGA GTCGGATGTT GGTAAAGAGA AGATTAATGT TCTTCTGAA	900
AAAATACACA AGTATAATTC AGATGTTTCAG GTAGTACCTA TTTCTATTAA AGTTTCTTCA	960
GTAGAAGAAT TAGAAAAAT TGTTGCGGAA TATGGGAGTA TAGATTTTAT CGTTAAAGCA	1020
ATTGATACGC CCATTGATAT TATAAAAATT GTCAATCAAT TTGCTGTATC GCATAAGATA	1080
TCCTACATAT CAGGAGGGTT TAATGGATGC TATCTTATTA TTGATAATAT ATATATCCCT	1140
ACCATCGGTT CTGCTTTGG TTGTCGGAAT ATAAACAAAG ATATAAATAA GTACACTTTA	1200
TCTGATAAGA CAAAGTGGCC GACTACACCA GAGATGCCTG CTATTTTGGG AGGGATAATG	1260
ACTAATTTAA TAATTAAAAT ATTTCTGGGA TGTTATAATG AAATCCTAAT AGATAACGCT	1320
TACGTTTATA ATATGAGAAA TCATGCTCTA AGTCAAGAAA AATATGTTCT GGAAAACGGA	1380
GAATGTCCAA TTTGTAAAAA AATAATAAAG TGAAAGATAA CAATATTAGA GCGAAAACAT	1440
TTATTCGTTT AGTTTGTTTT TGCTTATTAT CAGGAGGAGT AGCTTTTTTA TCTGCTATTG	1500
GGCAGTTCAC TGTATAGAA ACACAATTAA TAGTATTGTT CTGGGTATT ATTTTGTCTA	1560
TATATTATGC TTAATACAAT AAAAATATTC AAACATCATT GGAAAATATA GTATGGCTTT	1620

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TTTCATCGTT TGAGATTTTA TTTTGCCTG TTAATTTTAG AACATTATT CAGTTACCAG	1680
TGGATATTTT TATTGGTATG ATAATATTTT TAATGCTGTG GATATTTATT ATGTTAGGTA	1740
TAGTGTGTCT TAGTTATTAT ATAACCTTAT TATTTAGCAA GGAGGCTTAG TATGTTTAAA	1800
AAAATAGGTA TAATGAGCAT TTGCATATAT ATAATTATTT TATACTGCTT GAGAATGTAT	1860
CGTATTATCA ATAATATTGA AACAATCTTG CTAACGGTTA TATGCTTAAT GTTATTGTTT	1920
TTTTTAAGAC GTTTATTTGA TAAAGATAAG TAAATAGATG TTAAGTAAAA ATGTAGAATA	1980
TAAAGGAGGT GCAATGAGTA TGATTGAAGT TAGCCATTTA TCAAAAAGTT TTGGTGATAA	2040
AATAGCTTTA AATAATATAA GCTTCACTGT TAAAGAAGGT TAGATTTTTG GATTTTTAGA	2100
ACCATCTGGT TCTGGAAGA CCACAACGAT TAATATTCTG ACTGGGCAGT TCCTTGCCGA	2160
TAAAGGACAA TCTATTATTT TGGGACAAAA ATCTCAAAAT TTAACAAGCG GTGAATTAAA	2220
GAGAATTGGA TTGGTTAGCG ATACAAGTGG ATTTTATGAG AAAATGTCTC TGTATAACAA	2280
TCTTCTTTTT TATAGTAAAT TTTATAATAT TAGTAAATCA CGTGTGATA ATTTGTTAAA	2340
GCGAGTAGGA TTATATGATA GTCGCAAGAT GGTAGCAGGA AAATTATCCA CTGGAATGAG	2400
GCAACGAATG CTTTTCAGAC GAGCTCTTAT CAACAACCCC GCTGTACTCT TTCTGGATGA	2460
ACCGACCTCA GGTCTAGATC CCACAACCTC TCGAACAATT CATGAGTTAA TTTTAGAATT	2520
GAAAACAGCA GGGACAACGA TTTTCTAAC GACTCATGAT ATGAATGAAG CAACTCTTTT	2580
ATGTGATTAT GTTGCCTTAT TAAATAAAGG GAAATTAGTT GAGCAAGGAG CTCCTTCTGA	2640
ACTCATTTAA AGATATAATA AAGATAAAAA GATTAAGGTT ACAGATTATA ATGGGAATCA	2700
GATAACTTTT GATTTTACAT CACTAGAACA GGTATCTCAG ACTGATCTGG AAAATATTTT	2760
TTCAATTCAT TCATGTGAGC CTACTTTAGA AGATATTTTT ATCACATTAA CAGGAGGAAA	2820
GCTAAATGCT TAAACGGTTT CTGGCTTTGG TATGGTTGCG TTGTCAAATC ATCCTTTCCA	2880
ATAAGAGTAT TTTATTGCAA GTTTTAGTGC CTTTTCCTTT CACATATTTT TATAAATATC	2940
TTATGGAAC ACAGGGAAG GTCAACGATC AACAGGCATT AGTTCTTTTG ATGATGTGTT	3000
TACCTTTTTT TTTTCTTTG GCTGTGGAA GTCCTATAAC TATTATCTTG TCTGAAGAAA	3060
AAGAAAAGTA CAATTTACAA ACTCTCTGT TGAGTGGTGT TAAAGGCTCC GAATACATTT	3120
TATCAACTAT GTTCTTCCT TTTTGTCTAA CTTTGTGAT TATGGGAAC ACTCCTCTTA	3180
TTTTAGGAGT TACAATTGTA CATACTTTTA ATTATATTAC AATCGTCTT CTAACCTCTT	3240
TATCCATCAT TTTATCTAT TTATTGATAG GTTTAACCGC GAAGAGCCAA GTAGTAGCTC	3300
AGGTTATCAG TCTTCCTGCT ATGATTTTAG TTGCTTTCTT ACCGATGCTA TCTGGTTTGG	3360
ATAAGACAGT TGCGAAGATA ACAGATTATA GTTTTATGGG ACTATTTACT AAGTTTTTCA	3420

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CAAAATGGGA GGAATTTTCA TGAATAAAA CTCTAATTCC TAATCTAACA CTACTTATTT	3480
GGATTGTTCT TCTATTAAC TTAATTACGA TAAC TATTAG GAAAAAGAAA ATTTCTTAAT	3540
TGAGTTATTT TAATGATTAT AAACACAAGT GGGAAGGAAA AAATGAACTG ATCTTTTTGA	3600
CAGCAATTCT ACAGAATAGT CTTATTGCTA TATTTTGATT TGAGTGTACG AAAAAAGAAA	3660
AATAACAATA GTGCTCATAC TAATTGCAGA AGTTTGGGT GATAAGATAA CTGATAAAT	3720
GCAATAAAAA ATGCAACATT TTAAATCTC CTCTATAAGT GCTTCAAAAA GTGCTTCAAA	3780
ACCTGTCTTG TAATCCAAGT ATTTTGGGG ACGGTGATTA ATAAGCTAGC AAAGCATCAT	3840
TAAGGATTTT TTCGGTAATT GTTGCCAAAT CGGTTTAAGA AAATACTCAC GAAGAAGTCC	3900
ATTGCGATTC TCATTACTTC CCCTTTGCCA AGATGAATAG GCATCCGCAA AATAAACAG	3960
AATTCACATT TGTTCATTA AAGGTAACA AGCAAACCTCT TTTCTCTGT CCGAAGTGAA	4020
AGTCTTTAAC TATTCTTTTG GAAAGAGTCT TGTGAGGTGT TCAATAGCAG TCAACATGGA	4080
TTTAGCTGTT TTTACTTGAC AAGTGCTAGT AGAAATAATA GAATAGTAAA AAACCTTTAA	4140
AGCAGTCCAG AGAGGCAGCT AAGGTTAGAC GGTGAAAGGG TGGAGACTAC CCATTTTTCG	4200
TGGAACCTTG CTGTTGGCAG GTTCCTTTT TCCTGGCTTC TGTGAGCCAG ACTCTCTCAC	4260
TAGTAAAGGT AAAAGGAGAA ACCTATGCGA GAACATCGTC CAATCATTGC TCTTGATTTT	4320
CCTAGTTT TG AGGCGGTCAA GGAATTTT GCTCTTTTCC CAGCAGAAGA AAGCCTTTAT	4380
CTCAAGGTAG GGATGGAGCT TTATTACGCA GCGGGGCCTG AGATTGTGTC CTACTTAAAA	4440
GGTTTGGGTC ATAGTGCTT TTTGGATCTC AAACCTCATG ACATTCCTAA TACAGTCAAG	4500
TCAGCCATGA AGATCTTGTC TCAGCTTGGT GTCGATATGA CTAATGTCCA TGCGGCTGGT	4560
GGTGTAGAGA TGATGAAGGC GCGCGGTGAA GGTCTTGGGA GTCAAGCCAA ATTGATCGCT	4620
GTAATCAGC TCACATCAAC GTCAGAAGCT CAGATGCAGG AGTTTCAAAA TATCCAAACC	4680
AGTCTGCAAG AGTCTGTGAT TCACTATGCC AAGAAGACAG CTGAAGCTGG CTTGGATGGT	4740
GTGTTTGCT CGGCTCAGGA AGTACAAGTC ATCAAGCAGG CTACCAATCC AGATTTTATC	4800
TGTCTGACAC CAGGGATTCTG TCCAGCTGGT GTTGCAGTTG GAGATCAAAA ACGAGTCATG	4860
ACACCTGCTG ATGCCTATCA AATCGGCAGT GACTATATCG TAGTGGGACG TCCCATTACC	4920
CAAGCTGAGG ATCCTGTTGC AGCTTATCAT GCCATCAAGG ATGAATGGAC ACAGGACTGG	4980
AATTAAAGAA CTAGATTAGA AAAATAAAAG GAGAATACCA TGACACTTGC TAAAGATATC	5040
GCTAGCCACC TCTTGAAAAT CCAAGCCGTT TACCTCAAAC CAGAGGAACC CTTCACTTGG	5100
GCATCTGGTA TCAAGTCACC GATTTACACT GATAATCGTG TGACACTAGC CTATCCAGAA	5160

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ACTCGTACCC TAATTGAAAA TGTTTTGTG GAAGCTATCA AAGAAGCCTT TCCTGAAGTA	5220
GAAGTGATTG CAGGAAGTGC AACAGCAGGG ATTCCACACG GAGCCATTAT TGCTGATAAG	5280
ATGGACTTGC CTTTGCCTA CATCCGTAGT AAACCAAAAG ACCACGGAGC TGGTAATCAA	5340
ATCGAAGGTC GCGTAGCTCA AGGTCAAAAA ATGGTAGTGG TTGAAGACCT TATTTCAACG	5400
GGTGGTTCAG TTCTTGAAGC TGTAGCAGCA GCCAAGCGAG AAGGAGCAGA TGTAAGTGA	5460
GTGTAGCGA TTTTCAGCTA CCAATTGCCA AAAGCAGATA AGAACTTTCG AGATGCTGGT	5520
GTTAAACTTG TGACGCTTTC AAAGTATAGC GAGCTTATCC ATCTAGCCCA AGAAGAAGGT	5580
TACATCACGC CAGAGGGCCT TGATCTTCTA AAACGCTTTA AAGAAGACCA AGAAAATTGG	5640
CAAGAAGGTT AGGTCAGTAA GATAAAGAGA GACGAGGCTA CCGAGTCTCT TTTACCATT	5700
TATTTAAAAT ATGACAG	5717

(2) INFORMATION FOR SEQ ID NO: 103:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 5558 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 103:

CCTGGACTTT CTAAAATGAA ATCTTGCGAC CTGGATCAAG CCCTTCATGA GCATTTTTC	60
GAAGAAGAAAT TAGCTGGTCA CTTTCATGTC CTTCATGGA CTTTTTTTAC AATGGCATTG	120
CTATCACACC CAATACCTAT CTAAGCGCCT GGTTCGTAAA CTTTATTGCA GCTCTTCCTC	180
TAAATTTTCT AATGTTGAA CCAATTGCCC GTTTTATACT AAGTTCTTTT CAGAAACCAT	240
TTACTGGGGA AGAAGTTGAA GATTTTCAAG ATGATGATGA AATCCCAACT ATTATCTAAG	300
CCAGTTCTGT AAAGTACTAA TATTTGAAAT CCACTTCCTT TTAGGGTGCA ATGGTTATAA	360
ATGAATTTTT GAGAGGATCA GAATGAAAAA ACTAGCAACC CTTCTTTTAC TGTCTACTGT	420
AGCCCTAGCT GGGTGTAGCA GCGTCCAACG CAGTCTGCGT GGTGATGATT ATGTTGATTC	480
CAGTCTTGCT GCTGAAGAAA GTTCCAAAGT AGCTGCCCAA TCTGCCAAGG AGTTAAACGA	540
TGCTTTAACA AACGAAAACG CCAATTTCCC ACAACTATCT AAGGAAGTTG CTGAAGATGA	600
AGCCGAAGTG ATTTTCCACA CAAGCCAAGG TGATATTCGC ATTAACTCT TCCCTAAACT	660
CGCTCCTCTA GCGGTTGAAA ATTTCTCAC TCACGCCAAA GAAGGCTACT ATAACGGTAT	720
TACCTTCCAC CGTGTATCG ATGGCTTTAT GGTCCAAACT GGAGATCCAA AAGGGGACGG	780
TACAGGTGGT CAGTCCATCT GGCATGACAA GGATAAGACT AAAGACAAAG GAACTGGTTT	840

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CAAGAACGAG ATTACTCCTT ATTTGTATAA CATCCGTGGT GCTCTTGCTA TGGCTAATAC	900
TGGTCAACCA AACACCAATG GCAGCCAGTT CTTTCATCAAC CAAAACCTCTA CAGATACCTC	960
TTCTAAACTC CCTACAAGCA AGTATCCACA GAAAATTATT GAAGCCTACA AAGAAGGTGG	1020
AAACCCTAGT CTAGATGGCA AACACCCAGT CTTTGGTCAA GTGATTGACG GTATGGATGT	1080
TGTGGATAAG ATTGCTAAGG CCGAAAAAGA TGAAAAAGAC AAGCCAACCTA CTGCTATCAC	1140
AATCGACAGC ATCGAAGTGG TGAAAGACTA CGATTTTAAA TCTTAAAAAC CAAAAAATA	1200
CAGTATCCAC ATTCGGTACT GTATTTCTTT TACTCTCAT TTTAAGTTAA ATTATTAAAA	1260
TCCCATATTT GGTCTATCCA GCCTTCATAA AAGCTGGCT CGTGGCAGAC CATAAGGATA	1320
GATCCCTAT ATTCTTTGAG AGCGCGTTT AGCTCATCCT TTGCATCCAC ATCCAAATGG	1380
TTGGTCGGCT CGTCCAGCAC TAAACGTTG TTTTCACGAT TCATCAAGAG ACAGAAACGA	1440
ACCTTGGCTT GCTCTCCCC TGATAATACT TGAATCTGGC TTTCAATATG TTTGGTTGTC	1500
AAACCACAAC GGGCAAGGGC TGCACGGACT TCTGCTTGAT TAAGGGCAGG AAAGGCATTC	1560
CAGACAGCTT CAAGAGGAGT TTGGCGATTA CCGCCTTCTA CTTCTGCTC AAAATAACCA	1620
AGTTCTAAAT AATCTCCAGC CTCCACTTCC CCAGCGATTG GCGAGATAAT GCCCAAGAGA	1680
CTCTTCAAGA GAGTTGTTTT TCCAATACCA TTAGCACCAA TAATCGCAAC CTTTGTATTG	1740
CGTTCGAAGG TAAGATTTAA AGGCTTAGTA AGAGGACGGT CGTAACCAAT TTGCAAGTTC	1800
TTGGCTTGGA AGATAAAGCG CCCTGGTGTA CGAGCTGGTT TGAAATCAAA GGATGGTTTT	1860
GGTTTCTCAC TTTGGAGTTC GATAATATCC ATCTTATCCA ATTTCTTTTG ACGAGACATA	1920
GCCATATTAC GAGTTGCAAC ACGGGCTTTA TTACGAGCCA CAAAGTCCTT GAGGTCTGCA	1980
ATCTCTTTCT GCTGGCGTTC GTAGGCTGCC TCTAGCTGAG ATTTCTTCAT AGCATAAACT	2040
TCTTGGAAC TGTAGTAGTC ACCAGAGTAA CGCGTCAGCT GTTGATTTTC CACATGATAG	2100
ACAATATTAA TAACGTCATT GAGGAATGGA ATATCGTGCG AAATGAGAAC AAAGGCATTC	2160
TCATAGTTTT GGAGATAGCG CTTGAGCCAA TCAATATGCT CAGCATCCAA GTAGTTGGTC	2220
GGCTCGTCCA ACAGCAAGAT ATCAGGCTTT TCAAGGAGAA GTTTTGCCAA AAGCACCTTG	2280
GTTCTTTGCC CACCTGACAA AGAAGTTACA TCCGTATCCA TGCCAAAGTC CATAACACCA	2340
AGAGCACGCG CTACTTCGTC AATCTTAGCA TCCAAGGTAT AGAAATCACG ACTCTCCAGA	2400
CGGTCTTGAA GTTCTCCTAC TTCTTCCATG AGAGCATCAA CATCCGCGCC GTCTTCAGCC	2460
ATTTTCATAT AGAGGTCATT GATACGAGCT TCAGCTTTGA AAAGCTCATC AAAAGCCGTA	2520
CGGAGAACAT CACGCACCGA CTGTCTTTCA GCAAGGACAG AGTGCTGATC CAAGTAACCA	2580

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GCCGTCACAT ATTTGGACCA CTCAACCTTT CCTTCATCTG GCAGCATTTT ACCAGTCACG	2640
ATACTCATAA AGGTTGATTT TCCTTCACCA TTGGCACCGA CCAGGCCGAT ATGTTCTCCC	2700
TTGAGGAGAC GGAAGGACAC ATCTTCAAAA ATTGCACGGT CACCAAAACC GTGACTCAGA	2760
TTTTTAACTT CTAAAATACT CATTTTAATT CCTTACCTTG TTTTATGTA ATCGTTTATA	2820
AAGGAGCCAA GCCAGATAGC CACCCAAAGT GTTGGTCCAC AAATCATCAA TCTCAAAGAC	2880
GCGATTGAAA TCAAAGAAAA AGTCCAAGAT TAATTGCGTA CACTCGATTC CAAGACTCAC	2940
AAGAAACTA AAAAGAAGGA CCTTTTTTGT TTTCCGCAA TTTGGAAATA GATAAAGGAG	3000
TTGGAATATC AGAGGAAAA ACAAGAAGAC ATTGAGGATA TTTTGTAATA AAATCCAACA	3060
TAATTGTCCA ATGTCACTCA CTTCGCCAG TTTCCAGAGA GAATTGAAAG GAGTCAAAG	3120
AAAAACCAGG CGTCCAAGAT GCTGAATACC TGGAGTTCCC ACTCCCACGG TAGATTGTTT	3180
TTGAGGAGTA AAGCAAAAC AGACAATGCA AATGCTATAG AAAATGACTC CCCAGACCAA	3240
AATATGATTA TAAGTCTTCT TCATCATTA GATTTTACCG CTGCGACTGC CTTCTGGCGG	3300
TCACGTTTCA TTGTGTTAGA GCGCAATTGT CCACAAGCTG CGTCAATATC TGTACCATGC	3360
TCTTGACGAA CCACACAGTT GACCCCTTTT TTCTTAAGCG TATCATAGAA AGCCAACACG	3420
CACTCTTTGG GACTACGGCT ATATTGGTCA TGCTCACTAA CTGGGTATA AGGAATCAAG	3480
TTTACATAAG ACAATTTCTT GATGTTCTTG AGCAATTCAG TCAATTCCAA GGCTTGTCT	3540
ACACCGTCGT TGACTTCATT AAGCATGATA TATTCAAAGG TTACACGACG GTTTGTTGTC	3600
TCAATGTAGT ATTCAATAGC AGCAAAGAGT TTTTCAATCG GAAAGGCACG GTTAATCTTC	3660
ATGATACTTG AACGAAGTTC ATTGTTAGGT GCGTGAAGAG ACACGGCAAG ATTGACCTGA	3720
ACCCCTTCAT CAGCAAAGTC ACGAATTTTA TGAGCCAAAC CTGAGGTGA AACCGTGATG	3780
TGACGAGCAC CGATAGCCAT TCCTTTATCA TCATTGATAG TACGAAAGAA ATTCAAGACA	3840
TTGTTGTAAT TATCAAAGGG CTCACCGATT CCCATGACAA CGATATGGCT GATGCGTTCA	3900
TCCTGACCAC GCTCATCAA GTATTTCTGA ACCAGCATGA TTTGCGCTAC GATTTCACCG	3960
TTATTGAGGT CACGTTGCTT CTTAATCAA CCAGAGGCAC AGAAGGTACA ACCGATATTA	4020
CAGCCGACCT GAGTGGTCAC ACAGACAGAT AAACCATAGT GTTGACGCAT GAGTACAGTC	4080
TCAATTAAAC TACCGTCGGG CAATTCAAAG AGATATTTGA CTGTACCATC AGCAGACTCT	4140
TGCACAATAC GTTGTTCAT GGGATTGACC ACAAACGGT CATTGAGCTT AGCAATCAA	4200
TCCTTGAAA GGTGGTCAT TTCTTCAAAT GACTGCACAC GTTTACGGTA GAGCCATTCC	4260
CAGATTTGAT CTGCACGAA TTTCTTTCT CCCTGCTCCA ATACCCATTC CTGCATGGTT	4320
TGATGTACCA AACTATGAAT TGAGGGTTTCT ATTTCTTCTC CTTATTCTCT ACTCACTCT	4380

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GACGAATGAC AAAATGACGT TGTCCCTTGT CGTCTTTCTG ACGACGTCTA TTTTCTTAT	4440
CTGCATTCCA CTTTCGTTTA GTTTGAGTCG GTTCTTTTCC TTTTCTAGAA GGTGTTTCTT	4500
CTTCCGTCTT ACGCATTTTC TTGTCAAATG ATGCTCGCTT AGGGGCTTCA TTTTCTAAGA	4560
CAAAATAGGC ACAACCATAA CTACAATACT CTAAAAGGTA GTCTTGTAAG CGACTGATTT	4620
TTTCAAGTTT TTCTTCTGTT CGGTCATCCT TGTA AAAACC TCGTAGGCGA AGCTGTTTCGT	4680
TGCTCCAGTC CCCACGATA TAATCAAAC TGGTTAATAC TTCTGAAAA CGCTGATTAA	4740
AAGTCGTCAC ATCAAAGGCA TCCTTGATAT TTTCAACCAA GGAAAAAGCT ATCCCTTCCG	4800
TTTCGACCTT GTCCCCGTGT AAATGGAAC CCGGACCAGG AAAGTTGTTA TAGTTGTATA	4860
ATTCAAGTGC AATTTCTTTT CGCATAGATA TCCTTTTTTC ACGATTACTT AATACTTTAT	4920
TCTACCATAA TTTCTAGCAG TTAGCACGTT TCTCATAAAA ATGAAAAAAG TCTGACGATT	4980
TTGTGACACC AGAATCTTAT AACCTAAAA GAGAAGAACA ATTCTTCCCT CCAACTATCA	5040
TTATTTAGCA GCTGCGTACA ATTCACTAC TTTATTCCAG TTGATTACTG AAAAGAAAGC	5100
TTTGATGTAG TCAGGACGCA CGTTGCGGTA TTTCACGTAG TAAGCATGTT CCCAAACGTC	5160
CAAGCCCAAG ATTGGTTTTT TACCTTCTGA GATTGGTGTG TCTTGGTTTG CTGTTGAAGT	5220
CACCTCAAGT TTCCCTTCTT TGTTGACAAC CAACCATGCC CAACCTGAAC CAAAACGAGT	5280
TGTTGCTGCT GCAGTGAAGG CTGCTTGGA TTCTTCAAAT GAACCAAATG TTGCATCGAT	5340
TGCTGCTGCC AGTTCTGCTG AAGGAGCTGT TTTCTCGGGA GTCATCAATT CCCAGAAAAG	5400
AGCGTGGTTC AAGTGTCGCG CACCATTGTT GATAAGTGCT TGACGGATAT CAGCTGGGAT	5460
AGATTCTACA TCAGCAAGCA AGGCTTCAAG GTCTTCACCG ATTTTCAGGGT GTTTTCTAA	5520
AGCTGCATTG GCATTGTTGA CATAAGTTTG ATGGTGTT	5558

(2) INFORMATION FOR SEQ ID NO: 104:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 6735 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 104:

GGAATTGTAA ATATCATATT GTTTTGCAC CCAAATATCG TCGTCAAATC ATTTATGGCA	60
GATACAAAGC TAGTATCGGA AGAATCATAC GTGACTTATG TGAGCGTAAG GGTGTAATAA	120
TCCATGAAGC GAATGCTTGT TCAGACCATA TTCACATGCT TATCAGTATT CCTCCGAAAC	180

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TTAGTGTTC GTCCTTTATG GGCTATTTAA AGGGCAAGAG CAGTTTGATG ATTTTGTATA	240
AGCATGCGAA TTAAAATAC AAATATGGCA ATCGCAAGTT TTGGTGTAGA GGCTATTATG	300
TAGATACGGT AGGCCGTAAT CAGAAAGTGA TAGCTGAATA TATTCAGAAT CAATTACAAG	360
AAGACAGAGT AGCAGACCAG CTCACGTTAT TCGAGTCAGT AGATCCGTTT ACTGGCGAAA	420
TAAATAAGAG GAAGTAACTA AGGTGCTTTA GCACCTGCTC GGGAAAGTGG TGCGCGAGGA	480
AGCTATTTTC GTGGGCCTTT GGCCCTGGCC GGTAGAAGCG GCTTATAGCC GCAGAACAAA	540
CCACCAGTTC AACTGGTGG TTTTGATTTA AAAAAGTGA TACATAAAAA TAAAGTCTA	600
TATAAAGGAT GGTAAAATTC CTGTTGTCCG ATTTGGACAA TATCCTAAAT AGTTACAATA	660
TATGGTCTAT ACTTTTCTT AGGAGAAAGC TAGATGTACA GACGTTTGAG AGATTTGAGG	720
GAGGATCATG ATCTGCCCCA AAAGCAAATA GCTACAATAC TTTGTTTAC AAATTCAGCT	780
TATGCCAAAA TTGAACGGGG TGAGCATGCG TTGACGGCTG ATGTATTGGT TAAACTCTCA	840
GATTTCTATG ACGTCAGTAC AGACTATTTA TTGGGATTAA CTGATTTTCC TGATAAAATT	900
CGCTTTAGAA AATAATCTCC TCAATTTTCAT AGAGTTTGAA AATGAGTGAG ATTTTTTATT	960
TGCCCTTTGA CAACTGAATA GCCTAAAATG GTACTTTTCT CATTTGTGGA GCAAATTTGA	1020
ATGGCTCGCC ATGATAAGAG CGATTTTAAA ATCATCAATA AAATAGAGCG ATACTTTATA	1080
TGCCATGATA CAAATGATAT ACAATGATAC TTCTGACCGT TCAGCCTGCC AACGTAAAAG	1140
AGCAGCAAGT GAAATTCCTA TGATGACTTC ATCAGTCATG CCACGTTGAA TGTGTGAGTT	1200
TGTTAGATAA ACGCAATTAA TCCTCAAAG GTTCCCCGAA CCTTTTGAGT TCTACAGACG	1260
CATCACGTGG AGTGTGTAAG CTTGTTGCTA AAAGCGTAAA AACCTTGGA CGAAAGGAAT	1320
AATAGACTTT CTGCGAAACA AAAATATAAT ACAATAAAC TATGAATGAT GAAGCAAGTA	1380
AACAATTGAG CGATAGCCGT TTCAAGATCC TTGTAGGTGT TCAGCGCACG ACTTTTGAAG	1440
AGATGTTAGC TGTGTTAAAA ACAGCTTATC AACGTAAAG CGCAAAGGT GGACGAAAAA	1500
GCAAATTAAG CCTAGACGAT CTCCTTATGG TAACTATTCA ATACATGCGA GAATAGAGCA	1560
CTTATGAACA AATTGCGGCT GATTTTGGCA TTCACGAAAG CAACTTAATC CGTCGGAGTC	1620
AATGGGTTGA AGCAACTCTT ATTCAAAATG GTTTTACGAT TTCAAATTCT GCCTTAATTC	1680
TGTAAAAACA GTAAAATTCG AAGGATTGTA AGGTAAGAGT TTTTTCCTT CTGAAAAAAT	1740
GGTATAATAG CAATCAAAAC TAGAAAAATA AACGGAATTT GGAACAGATT TGTCTGTATC	1800
CTAGTAGAGT GGTGATACTA TGAAGATTAG TAAGAGGCAC TTATTAAATT ATTCCATCTT	1860
GATTCCTTAC TTGCTTTTAT CTATTTTGGG CTTGATTGTG GTCTATTCTGA CCACCAGTGC	1920
TATTTTAATT GAAGAAGGCA AGAGCGCCTT GCAGTTGGTT CGAAACCAAG GAATCTTTTG	1980

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GATTGTTAGT TTGATACTGA TTGCCTTAAT TTATAAATTG AGACTAGATT TTTTGAGAAA	2040
TGAGCGACTA ATCATTTTAG TTATATTAAT AGAAATGCTT TTATTGTTCT TGGCTCGTTT	2100
TATTGGTATT TCCGTAAACG GGGCATAACG TTGGATTTCG GTTGCAGGAA TAACTATTCA	2160
GCCAGCTGAG TACTTAAAA TCATTATTAT TTGGTATTTA GCTCACCGAT TCTCCAAACA	2220
GCAAGAAGAA ATAGCTACTT ATGATTTTCA AGTTTGTACT CAAAATCAAT GGCTTCCCCG	2280
TGCTTTTAAT GATTGGCGAT TCGTTCTCCT AGTTCGTATT GGAAGTTTGG GAATTTTCCC	2340
TGATTTAGGA AATGCGACTA TTTTAGTCTT GGTTCCTTG ATTATGTATA CAGTAGTGG	2400
AATCGCTTAT CGCTGGTTTT CAACCATCTT GCGCTCGTA TCTGCCGCTT CTGTCTTTGT	2460
CTTGACCACT ATCAGCCTAA TCGGTGTGA GACCTTTTCA AAAATTCAG TATTCGGCTA	2520
TGTAGCCAAG CGCTTTAGTG CCTTTTPTAA TCCTTTTGCC GATCGTGCTG ATGCAGGTCA	2580
CCAGTTAGCT AATTCTTATT TTGCCATGGT CAATGGCGGT TGGTTTGGTC TAGGTCTTGG	2640
AAACTCGATT GAAAAACGAG GTTATTTGCC AGAAGCTCAT ACAGACTTTG TCTTTTCTAT	2700
CGTGATTGAA GAATTTGGCT TTGTTGGTGC CAGTCTTATT TTAGCTCTCT TGTTTTTCAT	2760
GATTTTGGCG ATTATCTTGG TCGGTATCCG AGCGGAGAAT CCTTTCAATG CCATGGTTGC	2820
ACTCGGTGTC GGAGGGATGA TGTTGGTTCA GGTATTTGTC AATATCGGAG GGATTTGGG	2880
CTTGATTCCA TCTACAGGAG TGACTTTCCC CTCTTATCC CAGGGTGGA ATAGTCTTCT	2940
AGTCTTATCA GTGGCAGTAG CCTTTGTCTT AAATATTGAT GCCAGTGAAA AACGCGCTAA	3000
ATTGTACCGA GAATTGGAAT ATCAACCAAT GAACCTTCTG TTGAAGTAGG ATAAAGAAAG	3060
GATAGTTTAT GTCTCTTCAA AAATTAGAAA ATTATAGTAA TAAAAGTGTT GTGCAAGAAG	3120
AAGTCTTGAT TCTAACAGAA TTAAGGAAG ATATTACTAA AAATATGCTT GCCCAGAGA	3180
CCTTTGAAAA AATAATACAG TTGAAAGAAT TATCAACGCA GGAAGATTAT CAAGGTCTAA	3240
ACCGTCTAGT GACTAGCTTA TCAAATGATG AAATGGTCTA TATTTACGC TATTTCTCTA	3300
TCTTGCCTCT TTTGATTAAT ATTTACAGAG ATGTGGATTT AGCTTATGAA ATCAATCATC	3360
AAAATAATAT TGATCAGGAC TATTTAGGTA AATTATCTAC AACGATTAAA TTGGTAGCAG	3420
AAAAGGAAAA TGCCGTTGAG ATCCTAGAAC ACTTGAATGT TGTCCCTGTT TTGACAGCCC	3480
ATCCAACACA AGTGCAACGC AAAAGTATGT TGGATTAAAC AAATCATATT CATAGTCTTT	3540
TGCGTAAATA CCGTGATGTT AAGTTGGGGT TGATCAATAA AGATAAATGG TACAATGATT	3600
TGCGTCGTTA CATCGAAATT ATCATGCAGA CAGACATGAT TCGTGAGAAA AAATTTAAAG	3660
TGACTAACGA AATCACGAAT GCTATGGAAT ATTATAACAG CTCCTTTTGT AAAGCTGTAC	3720

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CTCATTTGAC GACGGAGTAT AAGCGCTTAG CGCAAGCGCA TGGTCTGAAT TTAAACAGG	3780
CTAAACCAAT CACCATGGGT ATGTGGATAG GTGGTGACCG TGATGGAAAT CCATTTGTTA	3840
CAGCAAAGAC CTTGAAGCAG TCTGCACTCA CTCAGTGTGA AGTCATCATG AACTACTATG	3900
ATAAAAAGAT TTACCAACTT TATCGTGAAT TTTCTCTTTC AACTAGCATT GTCAACGTCA	3960
GCAAGCAAGT CAGAGAAATG GCTCGTCAAT CCAAGGATAA CTCGATTTAC CGCGAAAAAG	4020
AGCTTTACCG TCGTGCCTTG TTTGATATTC AATCAAAAAT TCAGGCAACT AAAACCTATC	4080
TGATTGAGGA TGAAGAAGTT GGGACTCGTT ATGAAACCGC CAATGATTTC TACAAGGATT	4140
TGATTGCCAT TCGAGATTCT CTA TAGAAA ATAAGGGCGA GTCCTTGATT TCAGGTGATT	4200
TTGTGGAATT ATTGCAGGCA GTAGAGATAT TTGGTTTTTA CTTAGCATCA ATTGATATGC	4260
GACAAGACTC TAGCGTCTAT GAAGCCTGTG TGGCAGAACT CTTGAAATCA GCAGGAATTC	4320
ATTCTCGTTA TAGCGAGTTG AGCGAAGAAG AAAAGTGTGA CCTTCTCTTG AAAGAATTAG	4380
AAGAAGATCC CCGAATTCTT TCTGCGACTC ACGCAGAAAA ATCAGAATTA TTAGCAAAAG	4440
AATTAGCTAT TTTTAAGACG GCTCGTGTTC TGAAGATAA GTTGGGAGAT GATGTCATCC	4500
GTCAGACCAT CATTTACAT GCAACCAGCC TTTCTGATAT GCTAGAATTA GCTATTCTGT	4560
TAAAAGAAGT AGGACTGGTG GATACGAAA GGGCGCGTGT TCAGATTGTT CCCCTTTTGT	4620
AAACAATTGA AGACTTGAT CATTCAGAGG AAACAATGAG AAAATATCTT TCTCTTAGCC	4680
TTGCCAAAA ATGGATTGAC TCACGAAATA ACTACCAAGA AATCATGCTT GGCTACTCTG	4740
ACAGTAATAA AGATGGCGGT TACTTGTCAT CATGTTGGAC CCTCTACAAG GCTCAACAAC	4800
AATTGACTGC TATTGGAGAT GAATTTGGCG TTAAGGTAC CTTCTTCCAT GGTCGTGGTG	4860
GTA CTGTCGG TCGTGGTGGT GGGCCAACCT ATGAAGCCAT TACATCTCAA CCGCTCAAGT	4920
CTATCAAGGA TCGTATCCGC TTGACGGAGC AGGGTGAAGT AATTGGGAAT AAATACGGTA	4980
ACAAAGACGC CGCTTACTAT AACCTTGAAT TGCTAGTATC GGCAGCTATT AACCGTATGA	5040
TTACTCAGAA GAAGAGCGAT ACCAATACCC CAAATCGTTA TGAAACCATT ATGGATCAAG	5100
TAGTGGACCG TAGTTACGAT ATCTACCGTG ATTTGGTCTT TGGTAATGAG CATTTCTATG	5160
ATTATTTCTT CGAGTCAAGT CCAATCAAGG CTATTTCAAG TTTTAATATT GGTTCCTCGTC	5220
CAGCCGCTCG TAAGACTATT ACTGAAATCG GTGGTTTGGC TGCCATCCCT TGGGTATTCT	5280
CATGGTCACA GAGTCGTGTT ATGTTCCCTG GATGGTACGG GGTGGTTCA AGCTTCAAGG	5340
AATTTATCAA TAAAAATCCA GAGAATATTG CTATCTTACG AGATATGTAC CAAAATGGC	5400
CTTTCTTCCA ATCGCTTCTT TCAAATGTTG ATATGGTTTT GTCAAAATCA AATATGAATA	5460
TTGCTTTTGA ATATGCTAAA CTTTGTGAAG ACCAGCAAGT TAAGGCCATC TATGAGACTA	5520

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TTTTAAATGA ATGGCAAGTT ACTAAGAACG TTATCTTGCC TATTGAAGGA CATGACGAAC	5580
TCTTAGCTGA CAATCCATAT CTAAAAGCTA GTCTGGATTA CCGTATGCCT TACTTTAATA	5640
TTCTCAACTA TATTCAGTTG GAGTTGATTA AACGCCAACG TCGTGGAGAA TTGTCCAGTG	5700
ATCAAGAACG ATTGATTCAT ATCACCATCA ACGGAATTGC GACAGGATTG CGTAATTCAG	5760
GTTGATAATT TTCAAGAGTG AATGCTAAAA GTGAATATCA AAAAAATTCT AATAGACTAT	5820
TGACAAGTAG TTTAAAAATG ATATAATTTA ACCATTCAGA AAAGTAATCA TACAAACTTT	5880
TTAGAGAGTC TGTGGTAGCT GAAAACAGAT AAGTGGCAAT GATGAAAATT GGGCTGAATG	5940
CTATTTAGAA TTTGAAATTA TAAAAATTCG GTAAGCACAC CTTACAGTGC ATCTCGTTAT	6000
TGCGAGACTG AGCGATAGGG AAATCCCTTA TAATTGAGGT GGTACCGCGC ATCGACGTCC	6060
TCACACAAGT TTTTGTGTG AGGATTTTTT TGATGGAGGT TAGTATGGAA AGAAAACGAT	6120
GGCGTCGCTT GTTTAGATAA GTGAAATATG TTAAAGGAAA TAAAAAGGAG AACAGAATG	6180
AAAAATAAAC GTTTAATTGG AATTATTGCT GCATTAGCAG TCTTAGTAGC AGGAAGCTTG	6240
ATTTATTCTT CAATGAATAA ATCAGAAGCT CAGAATAATA AGGATGAGAA GAAAAAACC	6300
AAGATTGGTG TGCTTCAATT TGTGAGCCAT CCATCCCTTG ATTTGATTTA TAAAGGGATC	6360
CAAGATGGAC TTGCAGAAGA AGGATATAAA GATGATCAAG TTAAAATTGA TTTTATGAAC	6420
TCAGAAGGTG ACCAAAGTAA GGTGCGACA ATGAGTAAAC AATTGGTTGC AAATGGGAAT	6480
GACCTTGTGG TTGGTATCGC AACACCAGCA GCCCAAGGGT TGGCTAGTGC AACAAAAGAC	6540
CTACCGGTTA TCATGGCCGC TATTACAGAC CCAATTGGTG CTAACCTGGT TAAAGATTTG	6600
AAAAAACCAG GTGGCAACGT TACAGGGGTA TCTGACCACA ATCCAGCTCA ACAACAAGTT	6660
GAACTCATCA AGGCTCTGAC ACCGAATGTG AAAACAATCG GAGCTCTTTA CTCAAGTAGC	6720
GAAGACAATT CAAAA	6735

(2) INFORMATION FOR SEQ ID NO: 105:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 6516 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 105:

CTAGAGGATC CCAGCAGGTA AATTGGCTTC AGCTGGCAAA AAAGTTGCCC TCGTTGAACG	60
CAGCAAGGCT ATGTACGGTG GAACTTGTAT CAACATTGGT TGTATCCCAA CTAAACCTT	120

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GCTAGTTGCT	GCTGAAAAGG	ACTTGTCTTT	TGAAGAAGTC	ATTGCTACTA	AAAACACGAT	180
CACTGGTCGC	CTCAACGGTA	AAACTATGC	GACTGTTGCT	GGTACAGGCG	TAGATATCTT	240
TGATGCGGAA	GCTCACTTCC	TTTCAAATAA	AGTCATCGAA	ATCCAAGCTG	GTGATGAAAA	300
GAAAGAACTG	ACTGCTGAAA	CAATCGTCAT	CAACACTGGT	GCTGTTTCAA	ACGTCTTGCC	360
AATCCCTGGA	CTTGCTACAA	GCAAAAACAT	CTTTGACTCA	ACAGGTATCC	AAAGCTTGGA	420
CAAATTACCT	GAAAACTTG	GAATCCTTGG	TGGCGGAAAT	ATCGGTCTTG	AATTTGCCGG	480
CCTTTACAAC	AAACTTGGA	GCAAGGTCAC	AGTCCTAGAT	GCCTTGGAATA	CATTCTTACC	540
TCGTGCAGAA	CCTTCCATCG	CAGCTCTTGC	TAAACAATAC	ATGGAAGAAG	ATGGCATTGA	600
ATTGCTTCAA	AATATCCATA	CTACTGAAAT	CAAAAACGAT	GGTGACCAAG	TGCTTGTCGT	660
AACTGAAGAC	GAAACTTACC	GTTTCGACGC	CCTTCTCTAC	GCAACTGGAC	GCAAACCAAA	720
TGTAGAACCA	CTTCAACTTG	AAAATACAGA	TATTGAACTA	ACTGAACGTG	GTGCTATTAA	780
AGTAGACAAA	CACTGTCAAA	CAAACGTTCC	TGGTGTCTTT	GCAGTTGGAG	ATGTCAACGG	840
TGGCCTTCAA	TTTACTTACA	TTTCACTTGA	TGACTTCCGT	GTGTTTACA	GCTACCTTGC	900
TGGAGATGGC	AGCTATACAC	TTGAAGACCG	TCTCAATGTG	CCAAATACTA	TGTTTCATCAC	960
ACCTGCACTT	TCACAAGTTG	GTTTGACTGA	AAGCCAAGCA	GCTGATTTGA	AACTTCCATA	1020
CGCTGTTAAG	GAAATCCCCG	TTGCAGCAAT	GCCTCGTGGT	CACGTAAATG	GAGACCTTCG	1080
CGGTGCCTTC	AAAGCTGTTG	TCAATACTGA	AACAAAAGAA	ATTCTTGGAG	CAAGCATCTT	1140
CTCAGAAGGT	TCTCAAGAAA	TCATCAACAT	CATCACTGTT	GCTATGGACA	ACAAGATTCC	1200
TTACACTTAC	TTCACAAAAC	AAATCTTCAC	TCACCCAACC	TTGGCTGAGA	ACTTGAATGA	1260
CTTGTTTGCG	ATTTAAGTTG	AGATTTAATC	GTATCGAACA	GCCCTCTTTG	GGCTGTTTTT	1320
ACTTCTGCGG	AATCTCAAAT	CTGTCTTTCT	CCTCTTTTAT	GATATAATAG	AAACATGAAC	1380
TTAAAACTA	CTTTGGGCCT	TCTTGCTGGG	CGTCTTCCC	ACTTCGTTTT	AAGCCGTCTT	1440
GGACGTGGAA	GTACGCTCCC	AGGGAAAGTC	GCCCTTCAAT	TTGATAAAGA	TATTTTACAA	1500
AACCTAGCTA	AGAACTACGA	GATTGTCGTT	GCTACTGGAA	CAAATGGAAA	AACCCTGACA	1560
ACTGCCCTCA	CTGTCGGCAT	TTTAAAAGAG	GTTTATGGTC	AAGTTCTAAC	CAACCCAAGC	1620
GGTGCCAACA	TGATTACAGG	GATTGCAACA	ACCTTCCTAA	CAGCCAAATC	TTCTAAAACT	1680
GGGAAAAATA	TTGCCGTCCT	CGAAATTGAC	GAAGCCAGTC	TATCTCGTAT	CTGTGACTAT	1740
ATCCAGCCTA	GTCTTTTGT	CATTACTAAT	ATCTTCCGTG	ACCAGATGGA	CCGTTTCGGT	1800
GAAATCTATA	CTACCTATAA	CATGATATTG	GATGCCATTC	GGAAAGTTCC	AACTGCTACT	1860
GTTCTCCTTA	ACGGAGACAG	TCCACTTTTC	TACAAGCCAA	CTATTCCAAA	CCCTATAGAG	1920

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TATTTTGGTT TTGACTTGGA AAAGGGACCA GCCCAACTGG CTCACTACAA TACCGAAGGG	1980
ATCTCTGTCT CTGACTGCCA AGGCATCCTC AAATATGAGC ATAATACCTA TGCAAACCTG	2040
GGTGCCTATA TCTGTGAAGG TTGTGGATGT AAACGTCCTG ATCTCGACTA TCGTTTGACA	2100
AAACTGGTTG AGTTGACCAA CAATCGCTCT CGCTTTGTCA TAGACGGCCA AGAATACGGT	2160
ATCCAAATCG GCGGGCTCTA TAATATCTAT AACGCCCTAG CTGCTGTGGC CATCGCCCGT	2220
TTCTTAGGTG CCGATTCGCA ACTCATCAA CAGGGATTTG ACAAGAGCCG TGCTGTCTTT	2280
GGACGCCAAG AAACCTTTCA TATCGGTGAC AAGGAATGTA CCCTTGTCTT GATTAAAAAT	2340
CCAGTCGGTG CAACCCAAGC TATCGAAATG ATCAAACCTAG CACCTTATCC ATTTAGCCTA	2400
TCTGTCTCTC TTAATGCCAA CTATGCAGAT GGAATTGACA CTAGCTGGAT CTGGGATGCA	2460
GACTTTGAAC AAATCACTGA CATGGACATT CCTGAAATCA ACGCTGGCGG TGTTTCGTCT	2520
TCTGAAATCG CTCGTCGCCT CCGAGTGACT GGCTATCCAG CTGAGAAAAT CACTGAAACG	2580
AGTAATCTGG AGCAAGTCTT CAAGACCATT GAGAATCAAG ACTGCAAGCA TGCCTATATT	2640
CTGGCAACTT ATACTGCCAT GCTGGAATTT CGTGAACCTG TGGCTAGTCG TCAGATTGTT	2700
AGAAAGGAGA TGAACCTAATG GTTTTACTT CACTTTCTCT AAAAGATGGC AATTACCCCT	2760
ATCAGCTCAA CATTGCCAC CTCTACGGAA ATCTCATGAA TACTACGGGG ACAATGGAAA	2820
CATCCTCATG CTCAAGTATG TGGCTGAAAA ACTGGGAGCC CATGTGACCG TTGACATCGT	2880
TTCTCTCCAT GATGACTTTG ATGAAAATCA CTACGACATC GCCTTTTTCG GTGGTGGTCA	2940
AGACTTTGAA CAAAGTATCA TTGCAGACGA CCTACCTGCT AAAAAAGAGA GCATTGACAA	3000
CTACATCCAA AACGACGGTG TAGTTCTGGC TATCTGCGGT GGTTCCTAAC TATTGGGTCA	3060
ATATTATGTT GAAGCTTCAG GAAAACGTAT CGAAGGGCTA GGGGTCTATG GACACTACAC	3120
GCTCAACCAG ACCAATAACC GTTTTATCGG TGACATCAAG ATTCACAATG AAGATTTCGA	3180
TGAAACCTAC TATGGATTTG AAAATCACCA AGGTCGTACC TTCCTCTCTG ATGACCAAAA	3240
ACCGCTGGGA CAGGTGTCT ATGGAAATGG AAACAACGAA GAAAAGGTCG GTGAAGGGGT	3300
TCATTATAAG AATGTCTTTG GTTCCTACTT CCACGGGCCT ATCCTCTCTC GTAATGCCAA	3360
TCTGGCTTAT CGCCTAGTTA CTACTGCCCT CAAGAAGAAA TATGGTCAGG ACATCCAAC	3420
CCCTGCCTAT GAGGACATTC TCAGCCAAGA AATCGCTGAA GAGTACAGTG ACGTCAAAAG	3480
CAAGGCTGAC TTTTCTTAAA CAAAGGAAAA TGATATCAAA GAACTCCGTT ATCTTGTCGG	3540
AGTTTTTTGT CTTTTCTTTT ACCCTTCTCC CTTGCATTTT CTCTCATTTT TTGCCAAAAT	3600
AGAGGGGTAG AAAGAAGGTA GCATATGTCT AAATTACAAC AAATCCTAAC ATATCTTGAA	3660

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TCAGAAAAAC TAGACGTCGC TGTCGTATCT GACCCCGTCA CAATCAATTA CCTCACTGGT	3720
TTTTACAGTG ATCCCCATGA ACGCCAAATG TTCCTCTTTG TCCTAGCAGA TCAGGAACCT	3780
CTCCTCTTTG TCCCAGCTCT TGAAGTAGAA CGTGCAAGTA GCACCGTTTC CTTCCCAGTA	3840
GTGGGCTATG TCGATTCTGA AAATCCATGG CAAAAATCA AACATGCTCT TCCACAACCT	3900
GACTTCAAAC GTGTCGCTGT TGAGTTTGAC AATCTCATCT TGACCAAATA CCATGGTTTG	3960
AAAACAGTTT TTGAGACTGC TGAGTTTGAC AACCTCACTC CTCGTATCCA ACGCATGCGC	4020
CTCATCAAAT CAGCTGATGA AGTGCAAAAA ATGATGGTTG CAGGTCTTTA TGCTGACAAG	4080
GCTGTTTCATG TTGGTTTGA CAATATTTCT CTTGATAAGA CTGAGACAGA TATCATCGCA	4140
CAAATCGACT TTGCCATGAA ACGTGAAGGT TATGAAATGA GCTTTGATAC CATGGTCTTG	4200
ACTGGTGATA ATGCTGCGAA TCCACACGGC ATTCCAGCAG CTAATAAGGT TGAAAATGAT	4260
GCTCTTCTCC TCTTTGACCT GGGTGTCTG GTCAATGGCT ATGCGTCAGA TATGACTCGT	4320
ACAGTCGCTG TCGGCAAACC AGACCAATTC AAGAAAGATA TTTACAACTT GACTCTTGAA	4380
GCCCAACAAG CTGCTCTTGA CTTTATCAAG CCAGGTGTGA CTGCTCATGA AGTGGACCGC	4440
GCTGCCCGTG AGGTCATCGA AAAAGCTGGT TATGGTGAGT ACTTCAACCA CCGTCTCGGG	4500
CATGGTATCG GTATGGATGT CCATGAATTC CCATCTATCA TGAAGGAAA CGACATGGTC	4560
ATCGAAGAAG GCATGTGCTT CTCTGTTGAA CCAGGTATCT ATATCCCTGG TAAAGTCGGT	4620
GTTCGTATTG AAGACTGCGG TGTGTTTACC AAGGATGGCT TCAACCTCTT TACAAGCACC	4680
AGCAAAGATT TGCTTTATTT TGATTAAACT ATATAGCCCC TATGCTTTCC TTTCAAATA	4740
TCTAGGGGCT ATTTTATTGT CATTTTCTG CTATTATGCT AAAGAAATTG GCTGCAATAA	4800
TCTAACCTTA AGTGTCTGGA ATGATAACGA GGGTGCTCTC CGCTTTTATC AAAGACAAGG	4860
GATGAAACCC CAAGAAACAA CAATGGAAAT GATAATTGAT TAAGAAGTCA TCTATCAAAA	4920
GATGTTAGAA AAAGTTCAAT TTCACTAGAA AATGAGGAAA ATCTCCCCAC AATAAAACGC	4980
ATAGTATCAG GTATTGTGTA CTGACCCCAA ACAGTTAGAC AATTAAATTA TCCGAAGGAT	5040
TTAGTTCTGT ACTGCACAGG ACTAAGTCCT TTAGTTTTA CCTTAATTCG TTTGTTGTTG	5100
TAGTAATCAA TATAGTCTAT AATGACTTGT TCCAATTGGT TAAGTGATTT AAATGTTTTC	5160
TCATAGCCAT AAAACATTTC GGATTTTAAA ATGCCAAAGA AAGATTCCAT CATACCGTTG	5220
TCTTGCTGT TTCCCTTGCG TGACATAGAT GCTTGAATTC CCTTATTCTC TAGGAACCGA	5280
TGATAAGAAT CGTGTGGTA TTGCCAGCCT TGGTCACTAT GGAGAATCGT ATTCTCGTAG	5340
TGCTTCTCTT TGAATGCCTG TTCCAACATT GTTGTACTT ATTCTAAATT AGGCGAACAA	5400
GAAAGATTAA AAGCAATAAT TTCGCTGTTA AAGCCATCTA AACTGGTGA TAAGTAAAGC	5460

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TTTTGAGTAC TTGCTGGAAT GGCAAATTCA GTCACATCTG TGTAGCACTT TTCCATTGTT	5520
TTAGAGCCTT CAAATTGGGC TTGAATGAGA TTCTCTGCCT TCTTACCAAC GTCTCCTTTA	5580
TGAGAAGAAT ATTTTCGTTT CTTTCGCATT TTAGCTTGTA AATTGAGTAC TTTCAATCAAG	5640
CCTTGAAC TC TTTTATGATT TACCAGATAA CCACGATTTC TTAGTTCTAA ATGAACCCGG	5700
CGATAAGCAT AATTTCCCTT GTGTTTCGATA AAGATGGATT GAATTCAGT TTTAAGCTCT	5760
TGGTCTTTAT CTGTTTTGTC TAGCTGTTTC AAGTGATAGT AGTAGGTCCA ACGAGCTAGT	5820
TTAATGGCTT CTAGAAGAAG ATCTAACGAA AACTCAGTCA TTAATTCCTG AACAATTTCT	5880
GTCTTTCTTC TTTCTCTTTT TCCTCCTTCA ATCGGAGTTC TCTTAACTTT TTTAGGATGG	5940
CATTCTCCGC TCTCAGGTAC TCTCCCTCTT GTTTTCTCAA CAATAGTATA CCCGTTTTTC	6000
CTGTATTGTG CTAGCCAGTT AAGAAGTATC GTACGACTTG GGAGACCGTA TTCAAGAGAA	6060
ACTCTATCTT TAGTCCAGCC TTCATGTCAG ACTTTATTAA CCCCAATTAT TCACCCCAAA	6120
TCTAAAAACC ATCCAGAATC CTGTCCTTAG CTTAGATCCT GGATGGTTTC TTTTTCACC	6180
CAATGGGTGT TTTTACTAG AAAAAAAGA GTTTCCCTT TATGGTATAA GTGTAGAAAA	6240
AAACACAAAA AGAAAGGAAA CTCACATGAA CAGTTTACCA AATCATCACT TCCAAAACAA	6300
GTCTTTTAC CAACTATCTT TCGATGGAGG TCATTTAACC CAGTATGGTG GTCTTATCTT	6360
TTTTCAGGAA CTTTTTCCC AGTTGAAACT AAAAGAGCGG ATTTCTAAGT ATTTAGTAAC	6420
GAATGAmCAA CGCCGCTACT GTCGTTATTC GGATTCAGAT ATCCwTGTCC AGTTCCTCTT	6480
TCAACTGTTA ACAGGTTATG GAACGGAATA TGCTTG	6516

(2) INFORMATION FOR SEQ ID NO: 106:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14654 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 106:

TTTTCAACCC ATATCGTGGC TCCTGAATAC TACTTACTGA CAACTATGCT ATCAGAGACT	60
TCTCTACTTG TTTTCTATAT CATTTTCATC CATAGAAAAC AACTCATCCA CTGGGACAT	120
ATCTTTAGCT ATACTGTTTC ATACTCTCTC TTTTCACTTT CTTTGTAGC AATTTATTTT	180
CTGATTAATT TCGTGTATCC TGATAGATATG GTCATTAATT TGCCATTTTT GATTAATACT	240
GGTTTGATTG TCTTGCTATC AGCTATCTCT TATATTAGTC TACTTGTCTT CACAAAAGAT	300

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AGCATTTTCT ATGAATTTTT AAACCATGTC CTAGCCTTAA AAAATAAATT TAAAAAATCA	360
TAGGAGTTTA AAATGAAACA ACTAACCGTT GAAGATGCCA AACAAATTGA ATTAGAAATT	420
TTGGATTATA TTGATACTCT CTGTAAAAAG CACAATATCA ACTATATTAT TAACTACGGT	480
ACTCTGATTG GGGCGGTTCG ACATGAGGGC TTTATCCCTT GGGACGACGA TATTGATCTG	540
TCCATGCCTA GAGAAGACTA CCAACGATTT ATTAACATTT TTCAAAGGA AAAAAGCAAG	600
TATAAGCTCC TATCCTTAGA AACTGATAAG AACTACTTTA ACAACTTTAT CAAGATAACC	660
GACAGTACGA CTAAAATTAT TGATACTCGA AATACAAAAA CCTATGAGTC TGGTATCTTT	720
ATCGATATTT TCCCTATAGA TCGCTTTGAT GATCCTAAGG TCATTGATAC TTGTTATAAA	780
CTGGAAAGCT TCAAACGCT GTCTTTCAGT AAACATAAAA ATATTGTCTA TAAGGATAGC	840
CTTTTAAAAG ATTGGATACG AACAGCCTTC TGGTFACTCC TTCGACCGGT TTCTCCTCGT	900
TATTTTGCAA ATAAAATCGA GAAAGAAATT CAAAAATATA GTCGTGAAAA TGGGCAATAT	960
ATGGCTTTTA TCCCTTCAAA ATTTAAGGAA AAGGAAGTCT TCCCAAGTGG TACCTTTGAT	1020
AAAACAATCG ATTTACCCTT TGAGAATTTA AGCCTTCCTG CACCTGAAAA ATTTGATACT	1080
ATTTTGACAC AATTTTATGG AGATTATATG ACCCTACCAC CAGAAGAAAA ACGCTTCTAC	1140
AGTCATGAAT TTCACGCTTA TAAATGGAG GATTAGGATG CAATATTTAG AAAAAAAGA	1200
AATTAAGAA ATTCAACTAG CCCTGCTGGA CTATATTGAT GAGACTTGTA AGAAACATGA	1260
TATTCCTTAT TTTCTCAGTT ATGGAACCAT GCTTGGAGCC ATCCGCCACA AAGGTATGAT	1320
TCCTTGGGAT GATGATATTG ATATTTCCCT TTATCGTGAG GATTATGAGC GTTTACTGAA	1380
GATTATTGAA GAAGAAAATC ACCCTCGCTA CAAGGTTCTT TCCTACGATA CATCTTCTTG	1440
GTA CTTCAT AATTTTCGAT CGATTTTGGA CACTTCTACT GTTATAGAAG ACCATGTTAA	1500
GTACAAGCGT CATGATACCA GCCTTTTCAT CGATGTCTTC CCAATTGATC GATTTACAGA	1560
CTTGAGCATT GTCGACAAGA GCTATAAGTA TGTGGCTCTT CGTCAACTAG CTTATATCAA	1620
AAAATCACGA GCAGTTCACG GTGATAGCAA ACTAAAAGAT TTTCTTAGAT TATGTAGCTG	1680
GTACGCTCTC CGATTTGTCA ATCCTCGCTA CTTTACAAG AAAATTGATC AACTAGTCAA	1740
AAATGCTGTA ACCAACACTC CTCAATATGA AGGAGGAGTT GGGATCGGTA AGGAAGGGAT	1800
GAAAGAAATC TTCCAGTTG ATACCTTTAA AGAACTGATT TTAAGTGAGT TTGAGGGCCG	1860
TATGTTGCCT GTTCCCAAAA AATATGACCA ATTTTAAACC CAGATGTATG GCGATTATAT	1920
GACACCACCA TCAAAAGAAA TGCAAGAGTG GTATAGTCAT AGCATTAAAG CTTATCGCAA	1980
AAACTGATTG AGGGGGATTA TACAAACTAC TAAGATAGAG GTTATTCAA AACATAATTT	2040
TAGTAGAAAA TGAAATACAT ATTCCACAA TAAAACGCAT CATATCAAGG TTTTGA AAA	2100

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ACCTTGATAT GATGCGTTTT ATAATTTTAA AGACTTTTTT CTATAGTAGA TTGAAATAAG	2160
ATGCGAACAA ATCAATTAGA AAATTCAAAT TAATTTATAG AAATATTTTA GTATTCCTGT	2220
GTACTGTTCT AAATTCAGTC TGCTATATCT TATTTTTCTA TTTAAATCGC TTCTGTAACA	2280
AAGCTACGAC TTTCAAGTAC CTTAAGCATG GCATTAGCTG TATCTAGCGC TGTGAAGAGG	2340
GGCACCCCGT GTTCAATGGC TGAACGACGA ATTTGCTCAC CATCTTCGTC AGCAGTTCGT	2400
TTTGTTCCTA CTGTGTTAAT GATAGCTTGA ATTCTTCCTT TCGGTACAAA ACTTGGGATA	2460
TCCTTATCGT CATCACCAAT CTTACCAACA GGTGGGCTT GCAAGCCATG ACTAGCAAAG	2520
AAGGCTGCTG TCCCTTCTGT CGCAAGGATT CCATAACCAA TGTTTTGGAA ACGACGAGCC	2580
AAGTTC AAGG CTTCTTCTTT GGCATCATCA GCGATGGTAA AGACGACATT ACCAAAAGTT	2640
GGCAAGTGTA GATAAGAAGC TTCAAAGGCT TTATAGAGAG CTTTTTCCAA AGTAGCATCA	2700
GAACCCATAA CTTACCTGT TGACTTCATT TCAGGACCGA GCAAGCTGTC TACCTTAGCT	2760
AGTTTGGTAA AGGAGAAGAC AGGTGCCTTG ATATGAACAC GGGTGCCTTC AGGGTAAAGT	2820
CCATTTGGT AGCCAAGTTC TGATAAACTT TGACCAAGAA TGAGTTGGT CGCTACTTGA	2880
GCCATAGGAA TATTGGTTAC CTTAGATAGG AATGGAACAG TACGGCTGGC ACGTGGATTG	2940
ACCTCAATAA CGTAGACTTT TTCATCCTTG ATAACAACT GGATGTTCAT CATTCCAAGG	3000
CAGTGAAGAC CGATTGCTAA GCGTTTGGTG TAGTCTGCGA TGGTCTCCTG AACCTTTTGC	3060
GACAAGGTTT GTGGTGGGTA AACAGCCATT GAGTCACCTG AGTGGACACC AGCACGTTCTG	3120
ATATGCTCCA TGATACCAGG AATGAGTACA TTTTACCAT CTGAAATGGC ATCAACTTCG	3180
CACTCTTGCC CAACGATATA AGAGTCGACA AGAACTGGGT GGTCTGGACT AGCCTTAACA	3240
GCAGTTCGCA TGTAAGAAGC AAGGTCTTCT TCGTTTTCAA CGATTTCAT GGCACGTCCA	3300
CCAAGTACAT AAGATGGGCG GACAAGAACT GGGAAGCCAA TCTTGCGAGC TGCAAGAGCT	3360
GCTTCTTCTT CATTGGTAGC CGTTTGCTCT GGTGGCTGTG GAATATCCAA TTCTTTGAGA	3420
GCTTGCTCGA AGAGGTCACG GTCTTCGGCA CGATCTAGGT CAGCAACCTG TGTACCAAGG	3480
ATGGTCACAC CTGCTTTTGC CAATGGCTCC GCAAGGTGA TGGCTGTTTG ACCACCGAAC	3540
TGAACGATAA CTCCCTTTGG TTGTTCCAAG TCAATGACGT TCATAACATC TTCGAATGTC	3600
AATGGCTCAA AGTAAAGCTT ATCTGATACA GAGAAGTCTG TTGAAACGGT CTCTGGGTTT	3660
GAGTTCATGA TGATAGCTTC ATAACCAGCT GCCTGGATAG CCTTAACAGA GTGAACGGTT	3720
GCGTAGTCAA ACTCAACCCC TTGACCGATA CGGATTGGAC CTGAACCTAG GACAAGTACA	3780
GATTCTTTAT CAGATCTGAT AGATTCATTT TCCCAACCAT AGGTTGAATA GAAATATGGC	3840

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GTTTCGGAGT CGAACTCTGC CGCACAAAGTG TCTACCATCT TATAAACTGG AACAACTCTG	3900
TTTTCCAAGC GAAGTTGGCG AACTTTATCA TCAGTCGTTC CCCAGAGTTC AGCAATCTTA	3960
CGGTCTGAAA AACCATTAAG TTTGGCTGTT TTCAAAACCT CTAAATCTTG TGGATGAGCA	4020
CCCAATCTTT GCTCAATTC AAAGATATGC AAGAGTTTAT CAAGATAGAA GATATCAATT	4080
TTTGTAAGCT CTGCAATTC TTCAGGTGTG TAGCCACGAC GAATGGCTTC TGATACGTAG	4140
AAGAGACGGT CATCTGGGC TTTGACAACC TTTTCAATCA AGGCATCATC AGAACTGCT	4200
GCAAGTTCAG GTATTTCATT GTGGTGCACC CCAATTTCAA GGGAGCGCA GGCCTTGAGA	4260
AGAGATTCCT CGATGTTACG ACCGATTGCC ATGACTTCTC CAGTCGCCTT CATTTGTGTA	4320
CCGAGACGGC GTTCACCTT TTCAAACCTG TCAAATGGGA AACGTGGAAT CTTAGCAACT	4380
ACGTAGTCAA GGGCTGGTTC AAACATGGCA TAGGTTGAAC CTGTAACCTG GTTTATAACC	4440
TCATCCAAGG TCAAACCTAC TGCAATCTTG GCAGCCAACT TAGCAATCGG ATATCCTGTC	4500
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CGAATAATGC TCAAGCTCGC ATCACGAAGC ATTTGGTTTT CATAGTCTGA CATGGTTTGC	4680
GCAGGGGCAA ATACAATGGA ATCCCCTGTG TGAATCCCAA CTGGGTCAA GTTTTCCATG	4740
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TCAGTGATTT CACGCAATTC TTTCTCGTTG GCACACATAC CACCACCAGT ACCACCAAGG	4920
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GCCTGAGTCC CAGCGTAGTC AAACTCAGCA GCCTGACCAA TAATAATCGG ACCAGAACCA	5400
ATCACCATAA TTTTTTGAAT ATCAGTACGT TTAGGCATAT ATAAGATATT AAGGGTGTCA	5460
AGCGGACAAA GCTAAATAG GAGTTATGAC GAAGAACTGT CAGTTCTAGG AATAACTATC	5520
TTTTTAGCAC CGTCCGTAGC CCGTATTCAG TTCAGCAAAT ACGGAGCACC CTTCTCCTTT	5580
CTATTCTGTCG CCTCTCAGGG CGACATTAAA TAAGATACAA AGGACGAATA GAAAGCGATT	5640

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GAATTTTAGG AAATCAAGGA AGGATTGACA ATCCAAGTTG GTTCTCTAC ATTCTGAGCT	5700
TTCCGTCGGT GTTCAGTTAC ATAAATTCTC CGACGAGCTT TTAAGTCTTC TTAGTTTGAT	5760
TGTTTAAAAA CTTCCATCAT CTCGATAAAC TCGTCAAATA GGTAGCTAGC GTCGTGTGGC	5820
CCAGGAGCTG CATCTGGGTG GTATTGAACA GAGAAAGCAG GTTGGTATCT GTGGCGCACA	5880
CCTTCCACTG ACTTGTCATT GATTTCTTCG TGGGTAATAA TCAAGTGCTC TGGCAAATCC	5940
TCGCGGCTGA CTGCATAACC ATGGTTCTGG CTGGTGAAGT CTACTCGTCC TGTTGCGATT	6000
TCACGTACCG CATGGTTGAA TCCACGGTGG CCAAACCTCA TCTTATAGGT CTTAGCCCCG	6060
TTTGCCATTG CAAAGAGTTG GTGTCCCATC CAAATACCAA AGATTGGAAT TTTTCTTGT	6120
ACACCGCGAA TCATGTCGAG TGCTTGTGGA ACGTCTTCTG GGTACCTGG ACCATTTGAC	6180
AACATAACTC CGTCAGGATT GAGATGGAGA ATTTCTTCAG CCGTTGTCGA ATAAGGAACA	6240
ACTGTCACGT TACAGTTGCG TTTAGAAAGT TCACGTAGGA TTGAGTGCTT GAGACCAAAG	6300
TCCACTAGCA CCACGCTCAA ACCAACTCCT GGAGCTGGAT AAGACGTTTT AGTAGAAACC	6360
TGTTTGATAT TGTCTGTCGG TAAAACTGTT GCTTGAGCT GGTCCGTCAC ATGGTCCATA	6420
CTGTCCCAA CATGGGTCAA GGTGTCACGC ATAGTACCAT GCTTACGGAT AATCTTGGA	6480
AGAGCACGCG TATCAATTCC TGAAATCCCT GGAATTTTCT TGGCTTTCAA AAATTCATCC	6540
AAGGTCAATTT GGTGCGCCA GTTGCTAGCT CTACGCGCTT CTTCAAAAAC AACGACTCCC	6600
TTACAAGTTG GAATAATGGA TTCATAATCA TCACGATTAA TACCATAATT TCCTACCAA	6660
GGATAAGTAA AGGTCAAGAT TTGTCCATTA TAAGACTGGT CTGTAATGGA TTCTTGGTAG	6720
CCGGTCATCC CTGTATTAAA GACGATTTCG CCTGTTACAT CAATATCTGC TCCGAAGGCC	6780
TTGCCTTCAA AAAGTGTGCC ATCTTCTAAT ACTAGAATTC TTTTGTGCAT ATTTTCACCT	6840
CTCGTGGACG CTCAGTGGCG TCTTTTAACG TCTTGTGTTT TAGTTGGCGT TTCTACTCGC	6900
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ACGGAGAAAC ATCATGACAT CAACCTGATC AATGATTTCA TCAATGGTTA CAAACTGTCC	7200
ATAGTCTGCA AACTCTTGAC TTCTCCATTC CTCAGGTCCA GCGAAAAAGA GTTCAGCTCC	7260
CAAGCGTTTC AAAATCTGCA TATTGGATTT GGCAACGCGT GAGTGGTCCA AGTCACCTGC	7320
AATAGCAACT TTAAGACCCT CAAAGTGGCC AAATTCCTCA TAAATGGTCA TCAAATCAAG	7380

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CAAGCTCTGG CTAGGGTGTT GGGCCGAACC ATCTCCACCA TTGATGATGG AAGTCGTAAT	7440
CGTTGGACTA GCAATCAATT CTCTATAGTA GTCGACCTCT GGATGGCGAA TCACACAGAC	7500
ATCCACTCCT AAAGCAGACA GAGTCAAAAT GGTGTCATAA AGTGTCTCAC CCTTATTAAC	7560
CGAGCTAGTC TTCACATCAA AGTCAAGTCG TTCCAATCCA AGTTTAATCT CTGCGACTTC	7620
AAAGGACTTA TGTGTCCGTG TAGAATCCTC AAAGAAGAGA TTGGAAACAA TCGGATGGTC	7680
TTCATAGGGA AGCTGGGCTC CATTTTAACT CTCAATTCCT CGCTTGATCA ATTTCAATTAC	7740
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CATGGCTACT CCTTTAACTT TCTAAGCTTC TTCAGTAATC AGAACTCTGT CTTGGTCATC	7860
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GTAATCTGGA CGGATTGGCA ATTCTCTATG TCCACGATCG ACTAGAACTG CTAAACTCAC	7980
ACGCGCAGGA CGACCATGAC CGACAATATT ATCAATAGCA GCACGGATGG TACGACCTGT	8040
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AGTATCTTCT CCACTTTTAA CATCATCACG GAAAGGTTTA GTATCCAATT CCACAACAGG	8160
AACTGAAAGA TTTTCTAACT GCTTCAAACG TTCTTGGATT CGGTGGGCAA TAAAGACACC	8220
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CATGACAAAC CTCCAAAAAG AAAAGTCTCC TTAACAAGG AACTTGAAA TTTATAGCCA	8400
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GGCCTGATGG GCAGCTAACC ACTGCTCAGG CGGCAAGATA TCCATGACCC GCTTTTCCAC	8700
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CAAGCGAGAA ATATGTGAAG CAATCTCACT CTCTGTCGCT ACAGACATAG CTTGGGGTGT	9000
TGGAAAGGCA ACAAAGAGAC CTGGTGTGGC CTTATTTACC GCTGCATCTG TCGTCTGGGC	9060
TGATAACATG ACCGCAACCA GGAGTTCAAA ATGATTGGTA AAATCAAGAC TAGGCTTGGC	9120
ATCTGGGAAG AGGGCAATGA TTTCTTCTAG CACCTTTCGT GCTCGTTTTT TTGACAAGAC	9180

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CATTATTCAT CTCCGTCAA TAGTCCTTGT AAGCCAGCAA AAGGACTGTT TTCTTCTTTC	9240
TTTACTGCTT TTTGAGCTTG GTATTCTTCC TCTGTCATGA TTTGCCAGTC ATTTCTCTGAG	9300
ATAAATCCTT GACCAGCTTC TTCTTCAGCC GTCAAGACCT TGATAGGAAT GTTTAGCAGG	9360
ATATTGTCTG ATACACTCTC AGCAAGGTCA AGCTCCCCAT TTTCGATGGG CAAGACCAAG	9420
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ACTGGATAAG ATTCAACTAA CTCAACTGGC TCCATACTGC GACTCGACGC AAGAACAATG	9540
GTATAAGATA GTTGATAATC TAAGAAATAC ATACGGTCTT CATATTGTAC TTTCCCAACT	9600
GCAAGGATAT CTTTACATC TAAATTTCT TGATTACGTG CACGCAGGTC ATCAACTAAA	9660
TCTAACGTTT GTTCAAAGT CAAACCTTCA GACTGCTTAC GAATTTCTTG AATATTAAAT	9720
TTCATACTTC CTCCATAAAG ATTTACTCTC TTGATTATAC CATGAAAAGG CTACAAATCA	9780
GCACACCAA CTTTGTAAAT AAAATTCAA ATTTTAACAT ATTTACTATG ATAGTTTAT	9840
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GGTACGGCAG ATGATATTCG ACTACAAGAG CTGCTAAACA CTACTATGCA AGAGCTCAAA	10020
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AGTCTTCTGA TTGGACTGGG TAGCCTAAAA CTAAACGATC AAGCACGCAC TGCTTGGCGA	10140
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GCTTTTGTGTT ATGCACTATG AACATTCTAG AAAGGGAAAT CATATGATAA AAATCAATCA	10500
TCTAACCATC ACACAAAACA AAGATTTACG AGATCTTGTA TCTGACCTAA CCATGACCAT	10560
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CTATCAGTCA CTGGCCTACA TTCCTCAAAA AGTCCCTGAG GACCTAAAAA AGAAAACCTT	10740
ACACGACTAC TTCTTTTGTAG ATTCTATTGA TTTAGACTAC AGTATCCTCT ATCGTTTGGC	10800
GGAGGAATTG CATTTTGATA GCAATCGTTT CGCAAGTGAC CAAGAGATTG GCAATCTATC	10860
AGGGGGCGAA GCTTTGAAAA TTCAGCTTAT CCATGAGTTA GCCAAACCCT TTGAGATTCT	10920

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ATTTTATAGAT GAACCTTCAA ATGACCTAGA CCTTGAGACA GTTGATTGGC TAAAAGGCCA	10980
GATTCAAAAAG ACCAGGCAAA CCGTTATTTT CATTTCCCAT GATGAAGACT TTCTTTCTGA	11040
AACGGCAGAC ACTATTGTTC ACTTGCGACT GGTCAAACAC CGTAAAGAAG CGGAAACGCT	11100
AGTAGAGCAT TTAGACTATG ATAGCTATAG TGAGCAGAGA AAGGCTAATT TTGCCAAACA	11160
AAGTCAGCAA GCTGCTAACA ACCAAAGAGC CTACGATAAA ACCATGGAAA AACATCGGAG	11220
AGTTAAGCAA AATGTAGAAA CTGCGCTTCG AGCTACCAAA GATAGTACTG CCGGTCGCCT	11280
ATTGGCTAAA AAGATGAAAA CTGTCCTCTC ACAAGAAAAA CGCTACGAAA AGGCAGCTCA	11340
GTCCATGACT CAAAAGCCAC TTGAAGAGGA ACAAATCCAA CTTTCTCTTT CAGACATCCA	11400
ACCATTACCA GCTTCTAAAG TCTTAGTCCA ACTGGAAAAA GAAAATTTGT CCATTGACGA	11460
CCGAGTTTGT GTTCAAAAAC TACAATAAC TGTCCGTGGC CAAGAAAAAA TCGGTATTAT	11520
CGGGCCAAAT GGTGTTGGGA AATCAACTCT GTTAGCCAAG TTACAGAGAC TTCTGAATGA	11580
TAAAAGAGAG ATTTCACTTG GTTTTATGCC ACAAGATTAC CACAAAAAAC TGCAATTGGA	11640
TTTATCCCCA ATAGCCTATC TCAGTAAAC TGGGGAAAAA GAGGAACCTAC AGAAAATCCA	11700
ATCTCACCTA GCTAGTCTCA ATTTCACTTA TCCAGAAATG CAGCATCAAA TTCGCTCCTT	11760
ATCTGGCGGA CAACAGGGAA AACTCCTGCT TTTGGATTTA GTCCTGCGCA AACCAAACCTT	11820
TCTCCTGCTG GATGAACCCA CACGAAACTT TTCTCCCACT TCTCAACCCC AAATCAGAAA	11880
ACTCTTTGCT ACCTATCCAG GCGGTCTCAT CACTGTTTCG CATGACCGTC GTTCTTTAAA	11940
AGAAGTCTGC TCGATCATCT ATCGCATGAC AGAACACGGT TTGAAGCTAG TTAATTTAGA	12000
AGATTTATAA ATTTGCAACA TAGCAAAAAT CCAGAGACGA CCTCTGGATT CTTTACATC	12060
TGTTTTAAAC GTTCAATCCG TTCTGAGATA GGTGGGTGGG TATAAAAGAG TTTTGGAAAC	12120
CCCCACCTT TCTTAGGATC ATTGATATAA AGGGCACTGC TAGCATCATC GACGTGGCGA	12180
CTCATAGGTT TGCTATTGTC CAACTTATCT AGGGCATTAA TCATTCCCTG GGGATTGCGA	12240
GTCAGCTCGA CACTAGATGC ATCTGCCAGA AATTCCCTCT GACGAGAAAT AGCGAGCTGA	12300
ACCAAGGTTG CAGCGAGAGG TGCCAGTACA ATAGCTAGTA GGGAAACCAC TAGCATAATG	12360
ATTTCAAGAC CATTTCCATC TCGGTCATCA TCACTTCGTC TGCGACCTGC TCCACCCAC	12420
CACATCATAC GACCTGCCAT ACTAGAAAGC ATGGTGATAG CACTAGCAAG GGCAACTGCA	12480
ATAGTCGAAA TACGGATATC ATAATTACGA ATATGACTGA CTTTATGTCC CATAACAGCT	12540
TCTAGTTCTT CACGATTCAT GATAGCTAGT AGACCTGAAG TCGCAGCAAC AGCCGCATTT	12600
TGAGGATTAG AACCTGTCGC AAAGGCATTT AAGGCTGGAT CATCAATGAT GAAAACACGG	12660
GGCATAGGAA TCTGAGCGAC CAGAGCCATA TCTTCCACTA CATGGTAGAG GTCTGGTGCC	12720

GTTTGCTCAT CCACCTCACG CGCTCCATTC ATGGACATGA CAATCTCTGT CGATTGAAAA	12780
ATCATAGACA AAGCGTAGAT AAAGCCGATA ATCAGTGCAA TAACCAAACC ACCAAGTCCA	12840
GATCTTATAA AGAGATAACC AACCGCATAA CCAACAAGAG CTAAGAGTAG GAAAAATACC	12900
AGCAACAAAA TCCAGGTTTT TCGTTTATTG CTTGCAATTT GATCAACAA CATCTTAGTC	12960
ACCTAAACCG CTAAAATCAA CTTTAGGAAC CGACTTTTCC TCTTCAGGTG TTTGAAGGAA	13020
ATCTGCCGCT TTAAATCCAA ACATTCCAGC GATAATATTG CTCGGGAAAG TTTCTAATTT	13080
TACATTGTAG TTGCTGACAA CACTGTTATA GAGTTGACGA GAGTAAGAAA TTTTATTTTC	13140
TGTGTTTGTC AACTCCTCTT GCAATTTAAC AAAGTTAGCA CTAGCTTTCA AATCTGGATA	13200
GCTTCTGCA ACTGCAAAAA TACCTGAAAC CTGACGAGTG AGGGCATCAC TGGCTTTCAT	13260
AGCTTCTGCT GGTGAAGTCG CTGCCGCCAC TTGGTTACGT AGTTCTGCCA CCTTTTCAAG	13320
GGTAGAACCT TCATATTTGG CATAACCTTT TACAGTCTCA ATCAAGTTTG GCAAGAGGTC	13380
ATTGCGACGT TTCAACTGAA CATCAATCTG ACTCCAAGCC TCCTTGGTTT GCATACGATT	13440
TTTAACCAAA CCGTTATAGC TAACAATCAC AAAATAACA ATAAGAGCGA TAACTCCAAG	13500
AATAATCCAA GTCATAATAT AAGTCCTTTC TGCTTTTAGA TTAGTACCAG TATATCAAAT	13560
TTTCTATGAT TGTGGTAAAA TAAGATGATA CTAAAGAAGG AAATAACTAT GAAACCAAAA	13620
ACATTTTACA ACTTGCTTGC CGAGCAGAAT CTTCCACTTT CGGACCAGCA AAAAGAACAA	13680
TTTGAACGTT ATTTTGAGCT CTTGGTCGAG TGAATGAGA AGATTAATTT GACGGCGATT	13740
ACGGACAAGG AAGAAGTTTA TCTCAAACAT TTTTACGATT CGATTGCACC CATCTTCAA	13800
GGTTTGATTC CCAATGAAAC TATCAAACCT CTTGATATCG GGGCTGGGCG AGGATTTCTT	13860
AGTCTACCAA TGAAAATTCT CTATCCGGAG TTAGATGTGA CCATTATTGA TTTACTCAAT	13920
AAGCGCATCA ACTTCCTACA ACTCTTGGCT CAAGAAGTGG ATTTGAACGG AGTTCATTTT	13980
TACCACGGAC GTGCCGAAGA TTTTGCCCAA GACAAGAACT TCCGTGCTCA ATATGATTTT	14040
GTAACAGCTC GTGCGGTTGC CCGTATGCAG GTCCTATCTG AATTGACTAT TCCCTACCTT	14100
AAGGTTGGTG GCAAACATTT AGCACTCAAG GCTAGCAATG CGCCTGAGGA ATTATTAGAA	14160
GCTAAGAATG CCCTCAATCT CCTTTTtagT AAGGTCGAAG ACAATCTCAG TACGCCCTAC	14220
CGAATAGAGA TCCGCGCTAT ATCACAGTGG TAGAAAAGAA AAAAGAAACA CCAAATAAAT	14280
ATCCACGTAA GGCTGGTATG CCAAATAAAC GCCCACTTTA AATTTTtagT TAAACAAATG	14340
TTTACAAAAT CAGCCTCGCT CTTTtagTtagT TAGGCTCGGG AAAAAATGAT TTACAAAATC	14400
AGCCTCGCTC TTTTtagTtagT AGGCTCGGGA AAAAATGATT TACAAAATCA TTTTtagTtagT	14460

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CTATACTATC CTAAGCAAAG GTTTTTAATG TCATCCCGTG AGGTGACGAA GACGCAGAAA	14520
TATTTAAAC TCTTTAAAT CTAAATTTTA AAGAAGTCTT ACTCTGAGGG CCTATTGCTG	14580
TAAAATAATG GGCTCTTTT TGATGCCCAA AAGTGAGGTT TATATGAAAC AAGAATCAAC	14640
TGTTGATTG TTAC	14654

(2) INFORMATION FOR SEQ ID NO: 107:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 6405 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 107:

AGAAAAATCT GCTTTACAGA AAATAAAAT AATAGGAGAA AATCTATGTC AGATTGAAA	60
AAATACGAAG GTGTCATTCC AGCCTTCTAC GCATGTTATG ATGATCAAGG AGAAGTAAGC	120
CCAGAACGTA CGCGTGCCTT GGTTC AATAC TTCATTGATA AAGGTGTTCA AGGTCTTTAT	180
GTCAATGGTT CTTCTGGTGA ATGTATCTAC CAAAGCGTTG AAGATCGCAA GTTGATTTTG	240
GAAGAAGTCA TGGCGGTAGC AAAGGTAAAT TGACCATTAT TGCCCATGTT GCTTGCAATA	300
ATACTAAAGA TAGTATGGAA CTTGCTCGCC ATGCTGAAAG CTTGGGAGTA GATGCTATTG	360
CAACGATTCC ACCAATTTAT TTCCGCTTGC CAGAATACTC AGTTGCCAAA TACTGGAACG	420
ATATCAGTTC TGCAGCTCCA AACACAGACT ACGTGATTTA CAACATTCCT CAATTGGCAG	480
GGGTGCTTT GACTCCAAGC CTTTACACAG AAATGTTGAA AAATCCTCGT GTTATCGGTG	540
TGAAGAACTC TTCTATGCCA GTTCAAGATA TCCAAACCTT TGTCAGCCTT GGTGGAGAAG	600
ACCATATCGT CTTTAATGGT CCTGATGAGC AGTTCCTAGG AGGACGCCTC ATGGGGGCTA	660
GGGCTGGTAT CGGTGGTACT TATGGTGCTA TGCCAGAACT CTTCTTGAAA CTCAATCAGT	720
TGATTGCGGA TAAGGACCTA GAAACAGCGC GTGAATTGCA GTATGCTATC AACGCAATCA	780
TTGGTAAACT CACTTCTGCT CATGGAAATA TGTACGGTGT CATCAAAGAA GTCTTGAAAA	840
TCAATGAAGG CTTGAATATT GGATCTGTTC GTTCACCATT GACACCAGTG ACTGAAGAAG	900
ATCGTCCAGT TGTAGAAGCG GCTGCTGCCT TGATTCGTGA AACCAAGGAG CGCTTCCTCT	960
AATCTAAAAG GAGGTATTTA TGACATATTA CGTTGCAATT GATATCGGTG GAACCAACAT	1020
CAAGTATGGT TTGGTTGATC AAGAGGGGCA ACTTCTTGAA TCGCATGAAA TGCCAACTGA	1080
GGCGCATAAG GGTGGACCTC ATATCTTACA AAAGACCAA GATATCCTAG CTAGTTATTT	1140
AGAAAAAGGC CCAGTAGCAG GTGTTGCCAT ATCTTCTGCT GGGATGGTGG ATCCGGATAA	1200

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GGGTGAGATT TTCTATGCTG GGCCGCAAAT CCCTAACTAC GCAGGCACCC AGTTCAAAAA	1260
GGAAATCGAA GAAAGCTTTA CTATTCCTTG TGAGATTGAA AATGATGTCA ACTGTGCAGG	1320
TCTTGCTGAG GCAGTATCTG GTTCAGGCAA GGGAGCAAGT GTGACACTTT GCTTGACCAT	1380
TGGAACCGGT ATCGGTGGTT GCTTGATTAT GGATAGGAAA GTCTTCCATG GTTTTAGCAA	1440
TTCAGCCTGT GAAGTCGGGT ATATGCATAT GCAGGATGGA GCTTTTCAAG ACTTGCGCTC	1500
TACAACAGCT TTAGTGAAAT ATGTAGCTGA AGCCCATGGA GAAGATGTTG ATCAGTGGA	1560
TGGCCGTAGA ATTTTCAAAG AAGCCACTGA AGGAAACAAA ATCTGCATGG AAGGTATTGA	1620
CCGTATGGTT GACTATCTAG GAAAAGGTCT GGCAAATATT TGCTACGTTG CCAATCCAGA	1680
AGTGGTTATT CTTGGTGGTG GTATCATGGG GCAAGAGGCT ATCCTCAAAC CTAAGATCCG	1740
TACAGCCTTG AAAGAGGCTT TGGTACCAAG TTTAGCAGAA AAAACACGAT TAGAATTTGC	1800
CCATCACCAA AATACAGCAG GGATGTTGGG TGCATATTAT CATTTTAAGA CAAAACAATC	1860
CTAGTTTGGC TCAGCCAAAC TAGGATTTTC TTACACGTTT TTGTCTACGA TAGCCGTTGA	1920
GTTTTTTATT TTCCCAGTAG CTATTAAAGA TTTTTTCCTT GCTTTCGCGA TTGATTTC	1980
AAAAGTAGGC ATAAATCAA TCGATAAAGA AGAGCATAGG AAGTTGAGCG GATATTCGTT	2040
GGATATAGGA GGGTTGGCTG TGGGTGGCTA CAAGAACAGT CTCTGTATAG GTCTGGCTAT	2100
CTTTATTGGG AACACTTGTA AAGAGTACAG TCTTTGCCCC CATCTCCTTA GCATCTAATA	2160
GACTATCTAA AATAGAAGGA GTTGAGCCTG AAAGTGAGAA GCCCAGTACT AGACAATTTT	2220
CATCCATGAT GCTGGTTGTC CAGGCAAAGC CGTCTGGTC TGTCAAAGCT TCGCAGACCA	2280
CACCTAGTCG CATAAAACGT AATTTCATTT CACGGGCGAC GAGGCCAGAA CTCCTGTTC	2340
CAAAGAAGTA GATACGCTCA GCATCTTCGA TTAGCTGGGC AATTCGTTCT AGTTGGATT	2400
CGTCAATCAA GTCTTGTTT TGTTCCTCA TATTGCTATA ACTTCTGAGG ACTCGTTTGG	2460
TCAGTGGACT GTGCTTGAG ACTTGGTTGG CTTGATTTTC TGCCTGATGT TGGTATTGGA	2520
AAATAAATTC TCGGTAGCCA GTAAAGCCAC ACTTTTTAGC AAAGCGGGTC AAAGCAGCTT	2580
GAGAAATATG TAATTTTGG GTGACTTGTT GAGAAGATAA ATCATCTGTA ATCGTTTCAG	2640
CTTGCAAAAA ATAGCGAGCG ATTTCTTGTT CTAGGTCTGT CATTTCTTCA AAATGTGAAT	2700
CAATGATAGT TGCATATCT GGTGTTGCCA TAGGGAAAGC TCCTTTACAT GAGTCATACT	2760
GGAAGACTAG ATCAGAGAAT AGTCACACTT CATTATAACA CATAATATAA GGATAGATAA	2820
ATAAAACGC ATCTCTGTTT TAAAAACGAA AAAATCGAAA AAGCTTCTCT CTTTCCATA	2880
ATTTTCTACT CAAATTGTGG TACAATTAAG AGTAAGATTT TAAGTTAGAA ATGAGACTGA	2940

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TTTGATGAG AAAATTAAAC AGCCATTCTGA TTCCGATTTCG GCTTAATTTA TTGTTTTCAA	3000
TCGTCATTTT ACTCTTTATG ACCATTATTG GTCGTTTGTT GTATATGCAG GTTTTGAACA	3060
AGGATTTTTA CGAAAAAAG CTAGCTTCAG CTAGTCAGAC CAAGATTACA AGCAGTTCAG	3120
CCCGTGGGGA AATTTATGAT GCTAGTGGAA AACCTTTGGT AGAAAATACG TTAAAGCAGG	3180
TTGTTTCCTT TACGCGTAGC AATAAAATGA CGGCTACAGA CTAAAAGAA ACAGCTAAAA	3240
AGTTACTGAC TTATGTGAGC ATCAGTTCTC CAAATTTGAC AGAACGCCAG CTGGCGGATT	3300
ACTATTTGGC TGATCCTGAA ATCTATAAAA AAATAGTGA AGCTCTCCCA AGTGAGAAAC	3360
GCTTGGAATC AGATGGCAAT CGTCTATCCG AATCAGAACT GTATAACAAT GCGGTCGATA	3420
GTGTACAAAC GAGTCAACTA AACTATACAG AGGATGAAAA GAAAGAAATC TATCTTTTTA	3480
GTCAGTTAAA TGCTGTTGGA AACTTTGCGA CAGGAACCAT TGCGACAGAT CCTCTAAATG	3540
ATTCTCAGGT GGCTGTTATT GCCTCTATTT CAAAGGAGAT GCCTGGCATT AGTATTTCTA	3600
CTTCTTGGGA TAGAAAGGTT TTGGAAACTT CCCTTTCTTC TATAGTTGGG AGTGTATCCA	3660
GTGAAAAAGC TGGTCTCCCA GCGGAAGAAG CAGAAGCCTA TCTTAAAAAA GGCTATTCTC	3720
TAAATGACCG TGTAGGAACC TCCTATTTGG AAAAGCAATA TGAAGAGACC TTACAAGGAA	3780
AACGCTCGGT AAAAGAAATC CATCTGGATA AATATGGCAA TATGGAAAGC GTGGATACAA	3840
TTGAGGAAGG TAGTAAGGGA AACAAATCA AACTGACCAT TGATTTGGCT TTCCAAGATA	3900
GCGTGGATGC TTTACTGAAA AGTTATTTCA ATTCTGAGCT AGAAAATGGT GGAGCCAAGT	3960
ATTCTGAAGG TGTCTATGCA GTCGCCCTTA ACCCAAAAAC AGGTGCCGTT TTGTCTATGT	4020
CAGGGATTAA ACATGACTTG AAAACGGGAG AGTTGACGCC TGATTCCTTG GGAACGGTAA	4080
CCAATGTCTT TGTTCAGGT TCGGTTGTCA AGGCGGCGAC CATCAGCTCA GGTGGGAAA	4140
ATGGAGTCTT GTCAGGAAAC CAGACCTTGA CAGACCAGTC CATTGTCTTC CAAGGTTGAG	4200
CTCCCATCAA TTCTTGGTAT ACTCAGGCTT ACGGTTTATT CCCTATCACA GCGGTCCAAG	4260
CTCTGGAGTA TTCATCAAAT ACCTATATGG TCCAAACAGC CTTAGGTCTT ATGGGGCAAA	4320
CCTATCAACC CAATATGTTT GTCGGCACCA GCAATCTAGA GTCTGCTATG GAGAACTGC	4380
GTTCAACCTT TGGCGAATAT GGCTTGGGTA CTGCGACAGG AATTGACCTA CCAGATGAAT	4440
CTACTGGATT TGTTCCCAA GAGTATAGCT TTGCTAATTA CATTACTAAT GCCTTTGGGC	4500
AGTTTGATAA CTATACGCCG ATGCAGTTGG CTCAGTATGT AGCAACTATT GCAAATAATG	4560
GTGTTTCGTG GGCTCCTCGT ATTGTTGAAG GCATTTATGG TAATAATGAT AAGGGAGGAC	4620
TGGGTGACTT GATTCAGCAA CTGCAACCGA CAGAGATGAA TAAGGTCAAT ATATCCGACT	4680
CCGATATGAG CATCTTGCAC CAAGGTTTTT ATCAGGTTGC CCATGGTACT AGTGGATTGA	4740

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CAACTGGACG TGCCTTTTCA AATGGTGCCT TGGTATCCAT TAGCGGAAAA ACAGGTACAG	4800
CCGAAAGCTA TGTGGCAGAT GGTCAACAAG CAACCAATAC CAATGCGGTG GCCTATGCCC	4860
CATCTGATAA TCCCCAAATC GCTGTCGCAG TGGTCTTTCC TCATAATACC AATCTAACAA	4920
ATGGTGTAGG ACCTTCCATT GCGCGTGACA TTATCAATCT GTATCAAAAA TACCATCCAA	4980
TGAATTAGAA AGGAAATTAT GCTTTATCCA ACACCTATTG CCAAGTTGAT TGACAGTTAT	5040
TCTAAGTTAC CAGGTATCGG GATTAAGACG GCTACGCGTC TGGCCTTTTA TACGATTGGG	5100
ATGTCTGCTG ATGATGTCAA TGAATTTGCA AAAAATCTCC TTTCTGCTAA GAGAGAATTG	5160
ACATATTGTT CTATTTGTGG ACGTTTGACA GACGACGATC CTTGTTCTAT CTGTACTGAT	5220
CCGACTCGTG ACCAGACAAC AATTTTAGTT CTTGAGGATA GTAGAGATGT GGCAGCCATG	5280
GAAAATATCC AAGAATACCA TGGACTCTAT CATGTCCTTC ATGGCCTCAT TTCTCCTATG	5340
AATGGTATCA GTCCGACGA TATCAATCTC AAGAGCCTTA TGACTCGTCT TATGGATAGT	5400
GAGGTTTCAG AAGTGATTGT GCGACTAAT GCTACAGCGG ATGGTGAAGC GACTTCCATG	5460
TATCTTTCAC GTTTGCTCAA GCCGGCTGGT ATCAAGGTTA CGCGTCTAGC ACGAGGTCTC	5520
GCTGTGGGAG CGGACATTGA GTATGCGGAC GAAGTGACAC TCTTACGAGC CATTGAAAAT	5580
CGGACAGAGT TGTAAGTGTA GGCAAATTTA CGAACTCCAT TCATTTATAA AAAATCAAAG	5640
AGGCTGAAAA TCGTTCCTAT CGGCCTCTTT TTGTATAGTG TGATGAGTAG GCTCAGGTTT	5700
AAGTTTAA AAACCAAGCA AATATGATAT ACTAAAGAGC GAGTATTCTA GTAGAATTAG	5760
GACAAATAAT ATGAAACAAA CGATTATTCT TTATATAGGT GGACGGAGTG CGGAACGCGA	5820
AGTCTCTGTC CTTTCAGCTG AGAGTGTCTAT GCGTGCGGTC GATTACGACC GTTTCACAGT	5880
CAAGACTTTC TTTATCAGTC AGTCAGGTGA CTTTATCAAA ACACAGGAAT TTAGTCATGC	5940
TCCGGGGCAA GAAGACCGTC TCATGACCAA TGAAACCATT GATTGGGATA AGAAAGTTGC	6000
ACCAAGTGCT ATCTACGAAG AAGGTGCAGT GGTCTTTCCA GTCCTTCACG GGCCAATGGG	6060
AGAAGATGGC TCTGTTCAAG GATTCTTGGA AGTTTGGAAA ATGCCTTACG TTGGTTGCAA	6120
CATTTTGTCA TCAAGTCTTG CCATGGATAA AATCAGGACT AAGCGTGTTT TGAATCTGC	6180
TGGTATTGCC CAAGTTCCTT ATGTGGCTAT CGTTGAAGGC GATGATGTGA CTGCTAAAAAT	6240
CGCTGAAGTG GAAGAAAAAT TGGCTTATCC AGTCTTCACT AAGCCGTCAA ACATGGGGTC	6300
TAGTGTGGT ATTTCTAAGT CTGAAAACCA AGAAGAACTC CGTCAAGCCT TAAACTTGC	6360
CTTCCGATAT GACAGCCGTG TCTTGGTTGA GCAAGGAGTG AATGC	6405

(2) INFORMATION FOR SEQ ID NO: 108:

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- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 11309 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 108:

CGAGCTCGGG TACCGGGATT TTAAGGAGTT TGATATGTAT AACCTATTAT TAACCATTTT	60
ATTAGTATTA TCTGTTGTGA TTGTGATTGC AATTTTCATG CAACCAACCA AAAACCAATC	120
CAGCAATGTA TTTGATGCCA GTTCAGGTGA TTTGTTTGAA CGCAGTAAAG CTCGCGGTTT	180
TGAAGCTGTA ATGCAGCGTT TGACAGGGAT TTTAGTCTTT TTCTGGCTAG CCATTGCCTT	240
AGCATTGACG GTATTATCAA GTAGATAAGA AAATAATGGG CAGGACTAGG TCTTTGCCTC	300
TTTTTATTTT TAAAGGATGT TTGAGAAGGT TTTACAGTAA AAGAAAATTA AAAAATCTAG	360
AAAGAAAATA TGAAAGATAG AATAAAAGAA TATTTACAAG ACAAGGGAAA GGTGACTGTT	420
AATGATTTGG CTCAGGCTTT GGGAAAAGAC AGTTCCAAGG ATTTTCGTGA GTTGATTAAA	480
ACCTTGTCCT TAATGGAAAG AAAGCACCAA ATTCGTTTTG AAGAAGATGG TAGTCTGACA	540
TTAGAAATTA AGAAAAACA TGAGATTACC CTCAAGGGGA TTTTTCATGC CCATAAAAAAT	600
GGCTTTGGCT TTGTTAGTCT GGAAGGCGAG GAGGACGACC TTTTGTAGG GAAAAATGAT	660
GTCAACTATG CTATTGATGG TGATACCGTC GAGGTAGTGA TTAAGAAAGT CGCTGACCGC	720
AATAAGGGAA CAGCAGCAGA AGCCAAAATT ATTGATATCC TAGAACACAG TTTGACAACA	780
GTGTGCGGGC AAATCGTTCT GGATCAGGAA AAACCTAAGT ATGCTGGCTA TATTCGTTCA	840
AAAAATCAGA AAATCAGTCA ACCGATTTAT GTTAAGAAAC CAGCCCTAAA ATTAGAAGGA	900
ACAGAAGTTC TCAAAGTCTT TATCGATAAA TACCCAAGCA AGAAACATGA TTTCTTTGTC	960
GCGAGTGTTT TCGATGTAGT GGGACACTCA ACGGATGTCG GAATTGATGT TCTTGAGGTC	1020
TTGGAATCAA TGGACATTGT ATCCGAGTTT CCAGAAGCTG TTGTTAAGGA AGCAGAAAGT	1080
GTGCCTGATG CTCCGTCTCA AAAGGATATG GAAGGTCGTC TGGATCTAAG AGATGAAATT	1140
ACCTTTACCA TTGACGGTGC GGATGCCAAG GACTTGGACG ATGCAGTGCA TATCAAGGCT	1200
CTGAAAAATG GCAATCTGGA GTTTGGGGTT CACATCGCAG ATGTTTCTTA TTATGTGACC	1260
GAGGGGTCTG CCCTTGACAA GGAAGCCCTT AACCGTGCGA CTTCTGTTTA CGTGACAGAC	1320
CGAGTGGTGC CAATGCTTCC AGAACGACTA TCAAATGGCA TCTGCTCTCT CAATCCCCAA	1380
GTTGACCGCC TGACCCAGTC TGCTATTATG GAGATTGATA AACATGGTCG TGTGGTCAAC	1440
TATACCATTA CACAAACAGT TATCAAGACC AGTTTTCGTA TGACCTATAG CGATGTCAAT	1500

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GATATCCTAG CTGGCGATGA AGAAAAGAGA AAAGAATATC ATAAAATTGT ATCAAGTATC	1560
GAACATCATGG CCAAGCTTCA TGAAACTTTA GAAAACATGC GTGTGAAACG TGGAGCTCTC	1620
AATTTTGATA CCAATGAAGC GAAGATTTTA GTGGATAAAC AAGGTAAGCC TGTGATATC	1680
GTTCTTCGGC AGCGTGGTAT TGCCGAGCGG ATGATTGAGT CTTTTATGTT GATGGCTAAT	1740
GAAACAGTTG CCGAACATTT CAGCAAGTTG GATTTGCCTT TTATCTATCG AATTCACGAG	1800
GAGCCTAAGG CTGAAAAGGT TCAGAAGTTT ATTGATTATG CTTGAGTTT TGGCTTGCGC	1860
ATTATGGA CTGCCAGTGA GATTAGTCAG GAGGCACTTC AAGACATCAT GCGTGCTGTT	1920
GAGGGAGAAC CTTATGCAGA TGTATTGTCC ATGATGCTTC TTCGCTCTAT GCAGCAGGCT	1980
CGTTATTCGG AGCACAATCA CGGCCACTAT GGAAGTAGCTG CTGACTATTA TACTCACTTT	2040
ACCAGTCCAA TTCGTCGTTA TCCAGACCTT CTGTTTCACC GTATGATTCTG GGATTACGGC	2100
CGTTCTAAGG AAATAGCAGA GCATTTTGAA CAAGTGATTC CAGAGATTGC GACCCAGTCT	2160
TCCAACCGTG AACGTCGTGC CATAGAAGCT GAGCGTGAAG TCGAAGCCAT GAAAAAGGCT	2220
GAGTATATGG AAGAATACGT GGGTGAAGAG TATGATGCAG TTGTATCAAG TATTGTCAAA	2280
TTCCGTCTCT TTGTCGAATT GCCAAACACA GTTGAAGGCT TGATTACAT CACTAATCTG	2340
CCTGAATTTT ATCATTTCAA TGAGCGTGAT TTGACTCTTC GTGGAGAAAA ATCAGGTATC	2400
ACTTTCGGAG TGGGTCAGCA GATCCGTATC CGTGTGAAA GAGCGGATAA AATGACTGGA	2460
GAGATTGATT TTTCATTCGT ACCTAGTGAG TTTGATGTGA TTGAAAAAGG CTTGAAACAG	2520
TCTAGTCGTA GTGGCAGAGG GCGTGATTCA AATCGTCGTT CGGATAAGAA GGAAGACAAG	2580
AGAAAATCAG GACGCTCAAA TGATAAGCGT AAGCATTCAC AAAAAGACAA GAAGAAAAA	2640
GGAAAGAAAC CTTTTTACAA GGAAGTAGCT AAGAAAGGAG CCAAGCATGG CAAAGGGCGA	2700
GGGAAAGGTC GTCGCACAAA ATAAAAAGGC ACGCCACGAC TATACAATCG TAGATACGCT	2760
AGAGGCAGGG ATGGTCCTGA CTGGAAGTGA AATCAAGAGT GTACGAGCTG CTCGAATTAA	2820
TCTCAAGGAT GGCTTTGCTC AAGTGAAAAA TGGAGAAGTT TGGCTGAGCA ATGTTTCATAT	2880
CGCGCCTTAC GAAGAGGGCA ATATCTGGAA CCAGGAACCA GAACGTCGTC GTAAACTCCT	2940
GCTCCATAAA AAGCAAATTC AAAAATTGGA ACAAGAGATC AAAGGGACAG GAATGACCTT	3000
AGTTCCCCTT AAGGTCTATA TAAAAGATGG CTACGCTAAG CTTCTTTTAG GACTTGCCAA	3060
AGGGAAGCAT GACTATGACA AACGGGAGTC TATCAAACGT CGTGAGCAAA ATCGAGATAT	3120
CGCGCGTGTG ATGAAAGCTG TTAATCAGCG ATAAAAAGAG GAATTGAAAA TGGAAAAATT	3180
AGTTGCCTAT AAACGCATGC CTTTGTGGAA TAAACAAACA ATGCCTGAAG CTGTTTCAGCA	3240

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AAAGCACAAT ACAAAAAGTTG GGAAGTGGGG GAAAATTACT GTCTTGAAGG GAGCTCTCAA	3300
GTTTATTGAA TTGACAGAAG AAGGGGAAGT TCTAGCTGAA CACCTCTTTG AAGCAGGGGC	3360
AGACAATCCA ATGGCCCAAC CTCAAGCCTG GCACCGAGTG GAAGCTGCCA CAGATGATGT	3420
GGAATGGTAC TTGGAATTTT ATTGTAAACC TGAGGATTAT TTTGCTAAAA AATACAATAC	3480
CAATCCTGTT CATTCAGAGG TCCTAGAGGC CATGCAGACA GTGAAACAAG GGAAAGCTTT	3540
GGATTGGGT TGTGGTCAGG GCGTAATTC TCTTTTCTA GCCCAGCAAG ATTTTGATGT	3600
GACGGCTGTA GATCAAAATG GACTAGCTCT TGAAATCTTG CAAAGCATTG TGGAGCAGGA	3660
AGATTGGAC ATGCCTGTTG GCCTTTACGA TATCAATTCA GCTAGCATTG AACAAGAATA	3720
TGATTTTATC GTTCAACAG TTGTTCTCAT GTTCTACAA GCGGACCGCA TTCCAGCTAT	3780
TATTCAAAAT ATGCAGGAGA AAACCAAGTG TGGTGGTTAC AACCTTATCG TTTGTGCCAT	3840
GGACACGGAG GATTATCCTT GCTCGGTAA CTTCCATTG ACCTTTAAAG AAGGAGAACT	3900
GGCAGACTAT TACAAGGATT GGAATTGGT TAAGTACAAT GAAAATCCAG GCCATTTGCA	3960
CCGTCGCGAT GAGAATGGCA ATCGTATTCA ACTACGCTTT GCGACCTTAC TAGCTAAGAA	4020
AATCAAGTAA ACACACATGA AGATTAGGAA TTTTCCTGAT CTTTTTCTT TTTTACGAAT	4080
GATATAGAAA AGGAGGGAAT TCATGTTTGT TGCAGAGAT GCTAGGGGAG AATTGGTAAA	4140
TGTGTTAGAG GATAAACTTG AGAAGCAAGC ATACACCTGC CCAGCTTGTG GAGGCCAGCT	4200
CCATTTGCGT CAAGGACCAA GTGTACGGAC GCATTTTGCC CATAAATCCT TAAAAGACTG	4260
TGATTTTTTC TTTGAAAATG AAAGTCCAGA ACACCTGGCC AATAAGGAAT CCCTCTATCA	4320
CTGGTTGAAA AAAGAGACAA AGGTTCAATT AGAGTACCCG CTTTCAGAAC TTAAACAGAT	4380
TGCGGATGTA TTTGTAAATG GCAATCTAGC TCTAGAAGTT CAGTGATAGT CCTTGCCTCA	4440
GAAAGTCCTT AAAGAGCGAA GTGAGGGCTA TCGTAGTCAG GGTACCAAG TACTGTGGTT	4500
GCTGGGTCAA AAAGTGTGC TCAAGGAGCG TTTGACTCGT CTACAGCAAG GTTTCTTTTA	4560
TTTCAGTCAA AACATGGGCT TTTATGTTTG GGAATTAGAC AAGGAAAAAC AAGTTTTAAG	4620
ACTCAAATAC CTGATTTACC AGGATCTCCG CGGTAAACTC CATTATCAA TCAAGGAATT	4680
TTCTATGGT CAAGGTAGTT TATTGGAAAT ATTGCGTCTT CCCTATAAGA GACAAAAAAT	4740
ATCTCATTTT ACAGTTTCTG AGGACAAGGA CATCTGTCGC TATATCCGGC AACAACTTTA	4800
TTATCAAAAT CTCTTTTGA TGAAAGAACA AGCAGAAGCC TATCAAAAGG GAGAAAATAT	4860
CCTGACTTAT GGAAGTAAAG AATGGTATCC ACAAATTCGA CCAATAGTGG GCAAATTTTT	4920
CCAGATTGAA CAAGACTTGA CTAGCTATTA TCAGCACTTT TATACCTATT ACCAAAAAAA	4980
TCCTCAAAAT GATTGGCAA AGCTTTATCC ACCAGCCTTT TATCAGCAAT ATTTCTTGAA	5040

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AAATATGGTA GAATAGAAAG GATGGAGGAA TCTAATGGTA TTACAAAGAA ATGAAATAAA	5100
TGAAAAAGAT ACATGGGATC TATCAACGAT CTACCCAAC TACCAGGCTT GGAAGAAGC	5160
CTTAAAAGAT TTAACAGAAC AATTGGAGAC AGTAGCCCAG TATGAAGGCC ATCTCTTGGA	5220
TAGTGCGGAT AACCTACTAG AAATCACTGA ATTTTCTCTT GAAATGGAAC GCCAGATAGA	5280
GAAGCTTTAC GCTTATGCTC ATATGAAGAA TGACCAGGAT ACACGTGAAG CTAAGTATCA	5340
AGAGTACTAT GCCAAGGCCA TGACACTCTA CAGCCAGTTA GACCAAGCCT TTTCATTCTA	5400
TGAGCCTGAA TTTATGGAGA TTAGCGAAAA GCAGTATGCT GACTTTTTAG AAGCTCAACC	5460
AAAGCTGCAG GTTTATCAAC ACTATTTTGA CAAGCTTTTG CAAGGCAAGG ATCACGTCTT	5520
TTCAACAAGT GAAGAAGAAT TATTGGCTGG AGCTGGAGAA ATCTTTGGTT CAGCAAGTGA	5580
AACCTTCGCT ATCTTGAGCA ATGCGGATAT TGTGTTCCCT TATGTCCTAG ACGATGATGG	5640
TAAAGAAGTT CAGCTATCTC ATGGGACTTA CACACGTTTG ATGGAGTCTA AAAAACGTGA	5700
GGTTCGCGCT GGTGCCTATC AAGCTCTTTA TGCGACTTAC GAACAATTCC AACACACCTA	5760
TGCCAAAACC TTGCAAACCA ATGTTAAGGT GCAAAATTAC CGTGCTAAAG TTCGTAACCTA	5820
CAAGAGTGCT CGTCATGCAG CCCTCGCAGC GAATTTTGTT CCAGAAAGTG TTTATGACAA	5880
TTTGGTAGCA GCAGTTCGCA AGCATTTGCC ACTCTTACAT CGCTATCTTG AGCTTCGTTC	5940
AAAAATCTTG GGGATTTTCA ATCTCAAGAT GTACGATGTC TACACACCGC TTTCATCTGT	6000
TGAATACAGT TTTACCTACC AAGAAGCCTT GAAAAAGCA GAAGATGCTT TGGCAGTCTT	6060
GGGTGAGGAT TACTTGAGCC GTGTTAAACG TGCTTCAGC GAGCGTTGGA TTGATGTTTA	6120
CGAAAATCAA GGCAAGCGTT CAGGTGCCTA CTCTGGTGGT TCTTATGATA CCAATGCCTT	6180
TATGCTTCTC AACTGGCAAG ACAATCTGGA CAATCTCTTT ACTCTTGTTT ATGAAACAGG	6240
TCACAGTATG CATTCAGCT ATACTCGTGA AACTCAGCCT TATGTTTACG GGGATTACTC	6300
TATCTTTTGG GCTGAGATTG CCTCAACTAC CAATGAAAA ATCTTGACGG AGAAATTATT	6360
GGAAGAAGTG GAAGACGACG CAACACGCTT TGCTATTCTC AATAACTTCC TAGATGGTTT	6420
CCGTGGAACA GTTTTCCGCC AACTCAATT TGCTGAGTTT GAACACGCCA TTCACCAAGC	6480
AGATCAAAAT GGGGAGGTCT TGACAAGCGA TTTCTTAAAT AAACCTCTACG CAGACTTGAA	6540
CCAAGAGTAT TATGGTTTGA GTAAGGAAGA CAATCCTGAA ATCCAATACG AGTGGGCTCG	6600
CATTCACAC TTCTACTATA ACTACTATGT ATATCAATAT TCAACTGGCT TTGCGGCCGC	6660
CTCAGCCTTG GCTGAAAAAA TTGTCCATGG TAGTCAAGAA GACCGTGACC GCTATATCGA	6720
CTACCTCAAG GCAGGTAAGT CGGACTATCC ACTTAATGTC ATGAGAAAAG CTGGTGTGTA	6780

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TATGGAGAAG GAAGACTACC TCAACGATGC CTTTGCAAGTC TTTGAACGCC GTTTAAATGA	6840
GTTCGAAGCC CTTGTTGAAA AATTAGGATT GGCATAAAAT GGTGAATCG TATAGTAAGA	6900
ATGCTAACCA TAACATGCGT CGTCCTGTCG TCAAAGAAGA AATTGTAGAC TTGATGCGTC	6960
AGCGTCAAAA GCAGGTCACA GGTTCCTTGA AAGAATTGGA AGACTTTGCC CGCAAGGAAA	7020
ATATTCCTAT TATTCCTCAT GAAACGGTTG CTTATTTCCG TTTTCTTATG GAAACCATGC	7080
AGCCTAAAAA TATTCCTGAA ATTGGGACGG CTATCGGTTT TTCAGCTCTC TTGATGGCTG	7140
AACATGCGCC AAATGCTAAG ATTACAATA TTGATCGTAA TCCAGAAATG ATTGGTTTTG	7200
CCAAGGAAAA TTTTGCCCG TTTGACAGTC GCAAGCAAAT CACTCTCCTA GAGGGAGATG	7260
CGGTGGATGT CTTATCTACA CTGACAGAGT CTTATGATTT CGTCTTTATG GATTCTGCCA	7320
AGTCTAAATA CATCGTCTTT CTGCCAGAAA TCCTCAAACA TTTGGAAGTT GGTGGTGTGG	7380
TTGTCTTGGA TGATATTTT CAAGGTGGTG ATGTTGCCAA GGATATTATG GAAGTCCGTC	7440
GTGGTCAGCG AACCATTTAT CGAGGCCTTC AAAAATTATT TGATGCAACC TTAGACAATC	7500
CAGAACTCAC CGCAACATTA GTGCCTTTAG GAGATGGTAT TCTCATGCTT CGTAAAAATG	7560
TAGCAGATGT TCAACTGTCT GAAAGCGAAT GATTTTCAGA AAAATTTAAG AAAAAATAGT	7620
AAAATAGATA GAGTAACACT TATCTCAAAG GAGTAGACAT GAAGAAAAAA TTATTGGCAG	7680
GTGCCATCAC ACTATTATCA GTAGCAACTT TAGCAGCTTG TTCGAAAGGG TCAGAAGGTG	7740
CAGACCTTAT CAGCATGAAA GGGGATGTCA TTACAGAACA TCAATTTTAT GAGCAAGTGA	7800
AAAGCAACCC TTCAGCCCAA CAAGTCTTGT TAAATATGAC CATCCAAAAA GTTTTTGAAA	7860
AACAATATGG CTCAGAGCTT GATGATAAAG AGGTTGATGA TACTATTGCC GAAGAAAAAA	7920
AACAATATGG CGAAACTAC CAACGTGTCT TGTCACAAGC AGGTATGACT CTTGAAACAC	7980
GTAAAGCTCA AATTCGTACA AGTAAATTAG TTGAGTTGGC AGTTAAGAAG GTAGCAGAAG	8040
CTGAATTGAC AGATGAAGCC TATAAGAAAG CCTTTGATGA GTACACTCCA GATGTAACGG	8100
CTCAAATCAT CCGTCTTAAT AATGAAGATA AGGCCAAAGA AGTTCTCGAA AAAGCCAAGG	8160
CAGAAGGTGC TGATTTTGCT CAATTAGCCA AAGATAATTC AACTGATGAA AAAACAAAAG	8220
AAAATGGTGG AGAAATTACC TTTGATTCTG CTTCAACAGA AGTACCTGAG CAAGTCAAAA	8280
AAGCCGCTTT CGCTTTAGAT GTGGATGGTG TTTCTGATGT GATTACAGCA ACTGGCACAC	8340
AAGCCTACAG TAGCCAATAT TACATTGTAA AACTCACTAA GAAAACAGAA AAATCATCTA	8400
ATATTGATGA CTACAAAGAA AAATTAAAAA CTGTTATCTT GACTCAAAAA CAAAATGATT	8460
CAACATTTGT TCAAAGCATT ATCGGAAAAG AATTGCAAGC AGCCAATATC AAGGTTAAGG	8520
ACCAAGCCTT CCAAAATATC TTTACCCAAT ATATCGGTGG TGGAGATTCA AGCTCAAGCA	8580

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GTAGTACATC AACGAATAG TCCAAATCAA TGAGTCAGGG AAAAACTCG ACTTCAGGAA	8640
AAAATGAAGC AACATTTCCC ACAATAAAC GCATAGTACA AGGTTTGTAC TGCCCCCAA	8700
AAAGTTAGAC AATTAATTTA TCCGAAGGAT TTAGTTCTGT ATTGCACAGA GCTAAGTCCT	8760
TTTAGTTTTA TCTTAATTCT CTTATTGTTG TAATAATCAA TATAGTCTAT AATGGCTCGT	8820
TCCAATTGAT TAAGTGATTT AAATGTTTTC TCATAGCCAT AAAACATTTT GGATTTTAAA	8880
ATGCCAAAGA AAGATTCAT CCTACCGTTG TCTTGGCTGT TGCCCTTACG TGACATGGAT	8940
GCTTGAATTC CCTTACTCTC TAGGAAGCGA TGATAAGAAT CGTGTTGATA TTGCCAGCCT	9000
TGGTCACTAT GGAGAATCGT ATTCTCGTAG TGCTTCTCTT TGAATGCCTG TTCCAACATT	9060
AACGATCAAT CAATTTAATC ATGTACCTAA GATTAGAATT GTTTATCCCA AATTTATTTG	9120
AAAGCTTCTC TAAGCTATAT CCTTGTTTTC TAAGTTCATA GATCTGAACT TTATCATCAT	9180
AAGTTAATTT CATAATAAAA ACACCCCAA AGTTAGATTT TTTCTGTCTA ACTTTTGGGG	9240
TGTAGTTCAT GTACACCTGA TATGATGCGT TTTATAATTT TAAAGACTTT TTGACCAGCC	9300
TCATTTTTTT AACTTGATAC TCAGTGAAAA GCAAAGATTA AACTAGGAAG CTAGCTGTAG	9360
GCTGCTCAAA GAACAGCTTT GAGGTGTAG ATAAACTTG TGAGGTCACC AACATATATA	9420
ATGTGAAGCT GACGTGGTTT GAATAGATTT TAGAAGAGTA TGAGTCTGGA AGTTTAAATG	9480
GATAATGCAA GATTCATAG AATGGGTAAG CTAGAGTTCT TATGTGAAGA GTTTGGGCAT	9540
AAACTTTTAC CTTTCTCTCC CTAATCATCT TAGTATAGAA AAGTGAATCT GAAATAGTAC	9600
ATAACTGCTT CTAACACATT CTTATAAATT GATTTAAATT CTCAAATCAT ATTATTCAGT	9660
TCTTATTTCA TTTTGTCTA CAATCCTGTT GAGAAGACAC GTGTTTCATAT CAAAAAGTA	9720
TTGGCAAGTT GCAATACCTT TTTACGAGGC TCTGTTGTCT TATTTTGTGTT TCAACTGACT	9780
ATATCTCCTA TGTTCTAGT TCAGAAGGCT AGGCTATAAT TATGATTGAT AAGAAGTATC	9840
ATTCCAAGTA TTGGGAGTGA ATGTTTCAAA ATCATGGGTT TCTATAATGG TCAGGCTGGC	9900
ATTTGCTAGA CCGCCATCTT TACGAAGAAG TGGTTCTTTA TAGCCTAGGA GAGTACGAAG	9960
ACTGGCAGTA AGATTGGCGC CGTGTCCGAC AATTAGAATA CGTTCAGCTG GACTATCTTT	10020
TAATGATTTG ATAAATTGGA TGGTCCGTTG AGTTGTAATA TAGAGGGATT CGGCTCCGAA	10080
CATTCGAGTG TCAAATTGAG CAAGATTTGA ACGAAAAGCC TGGATTTGTT GCGGGTAAAT	10140
AGCTTCCAAG GTTGCAATTT TCAAACCTTC TAACTTCCCA AGTTGCCATT CACGGAGATT	10200
AGGAACGATT TCTAAAGAAC AGGGGTATA GAGTTGACTT TGGATAATCT CAGCAGATTT	10260
GACCGCTCGA GGTAAATCAC TTGAATAAAT CTGATCAAAA GGAATTCCTT TGAGATACTG	10320

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ACCAAGTCGT TTTAGGGTTT CAATGGATTC AGGAAGAAGA GGAGAATCAC CACTAGCACC	10380
TTGAAAACGA CCTTCTTGGT TCCAGAGGGT ACGACCGTGG CGGACAAAGT AGAGTTTCAT	10440
TACTTGATGT CCTCCAAAAT ATCTACAAAG TCTGCCTTTA CAAAGCTAGC CAAGTCTTGT	10500
GGCGCGACGA TAATGCTGTG TCCGACTTCG CCTGCAGAGA CAATCATTTG ATCCAAATCT	10560
AGAGCAATTT TATCGATAAA AATGGGATAA TTGTGTTTCT GACGAATTCC GACAGGATTA	10620
TTGGCTCCAT GAATGTAACC AGTTGTTTTT TCTAAGTCCT TTTGTGGAAT CATGCTCACT	10680
TTTTTATTGC CAGAAATTTT AGCTAGTTTC TTTTCAGACA AGTGCTGAGT GATAGGGACA	10740
ATTCCGATAA TCGGTCCGGT CTGTCTCCC AAAAGCGCCA AGGTTTGTAA AATCTGATCT	10800
CGTTCATAAC CTTGAGGAAG CTCTCCTTCT AGGGCATTGA TTTGAATCCC CTGATGAGGG	10860
ATAGCTGCTT TAGATAGGAT TTGTTCCACC AATGTTTTTT TGATTTTAAC TTTTTTTGCC	10920
ATTATTTATA TTTATCCTCC AATTGACTCA TCCAAATACC AAGCCAGATT CCCAGCGCAA	10980
AGAAGAAGGC GATGATGACA TAACCGACAA GTGAAAGTCC TGTGTATTGG ATACTTTTCTAG	11040
CGTTTCCTGC ATTTGGAATT AAGATCAAAA GGGTACTTGA TAGGACGATA CCGATGATGA	11100
AATGATAGAC GAACTGTTTA CGGAGTTCTT CTAGTTCTCC GTCCGTCCAA GCGTAGGCCA	11160
CTTCTTCTTT CTTGCCTTTA CCTTTGGACA TCTTGTAAG AGGTGGGAGG GCAATATAGA	11220
CATGACCTGC CTCGACTAGC GGACGCATGT AACGGTAGAA AAATGTCAAG AGCAAGGTCT	11280
GGATATGGGC ACCGTCGGTA TCCGCATCG	11309

(2) INFORMATION FOR SEQ ID NO: 109:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 5548 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 109:

CCATAGTCTA ACAAGTCTTT GTAAAGGTTT ATCCCTGATT CATGTAAAGA TTGTGTAAAG	60
AATCAAAAAA AGCCACTTTT GAAAAATGGC TGCTCCTAAA AATAGCTTTA AAAATTATTA	120
GTCTGTGCG AAAGATTGGT TAGGAAGAAA AATCGTGAAG CAACTGCCTC TGCCAAGCTG	180
ACTCGTCACC GTGACTTGGC CACCTAATAA TTGACTGAGT TCTTTGACAA TGGCAAGGCC	240
AAGACCAGTG CCACCAGTTT GTCTGCTTCG ACCTTTATTA ACTCGGTAAA AACGTTCAAA	300
AATACGATCC TGCTCTAATT GACTAATACC AATCCCTGTA TCTGATACAG AAATCTTAAT	360
GCCTTCGTTT ACCTTTTGGG TCTTGACCTC AATTTTCCCC CCTTGTTTCTAG TGTAACGGAT	420

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GGCATTGGAT AAAAGATTGA GTAAGATTTG GGAAAGTAAT TGACTATCTG ATACGAGGGT	480
GACATCATCT GGCACCTGCA CCTTTAGCTG TAAATCCTTC TTCTTGAGCT GAGGTTGCAA	540
GCTTTGAGTC AAATCCTGTA CAAATTCTGC CAAAGAAAGG GTCGTCCATT GTATAGGCAT	600
TTGTTGAGCC TTAGATAAGG TAAGAAGATG CTCAACAATA TGCTCAAGAC GCAAACCTTC	660
TTTGTAATA ATGTCTAGAA AGTCATCCTT GAGCGCTTCT TCTTCAGCTG ACATCCCCTT	720
AATGGTTTCA GCAAAGCCCT TAATCGAAGT AACTGGTGTC CTCAATTCAT GGGAGGCATT	780
TGAGACAAAG GCTAAATTTA ACTTTTCATA AGTTCTAATC GTTGTTAAAT CATATAGCAA	840
GACGAGCACA GCTTCCACAG ATTGGGTGGG GCTAAAAACG GGAAGTGTG TCACCTTCTAA	900
AATCAAGTCA CCCTCATGAA ACCCACTTAC TTCTTGTTTT AACCTTGTTT TTTGATCAAA	960
GGCTTGGTGA ACTAAATTCC GAATATCCAT CCGTTTGAGG TCATCAAGTG AACTTATGTC	1020
GCCGTCCACA TCGGGAAAAT AATGAGGCAG AGAGCGACTG GATAATAACA TCTGACCTTG	1080
AGCGGAAACT AAAACGTCC CCATGGTTAG GTGCGACAGA AGAACCTCCA TTGTTTCGGC	1140
TAGATCCTTG TATTGCTGAT CCTGTGGGA GACTTTGGTT TTTAGGCCAG ACACATACTG	1200
AGCCAAAGAC TTTAAGTCTT CTGCCCCTTT TTCTAAAAAG TATTCACTAC TGGTCAAGAG	1260
AGGTTGGTGC AAGGTCTCAA AAGCAACTTC CCATTTCCAA AGGCAAAAGA GCCAGTAGCC	1320
ACCTAGTCCC AAAGAAAGGG CTAGAAGAAA GAGACCGATG CCTTTACTGA TCCAAGTTAA	1380
TGCCATCCCT GCAATCAGAA TGAGGCTAAC ACTTAGATTG ACTAGCCAAA ATTGAAGGTA	1440
GCGTTTCATC TATAACTCCT TGAACCTTATA ACCATAACCC CGAATGGTTC GAATAAATTG	1500
AGGGGCTTTA GGATGTCTT CAATTTTTTC CCTCAACTTA CCAATATGAA CGTCCACCAA	1560
ACGTGTTTCC TGCCCAAAGT CATACCCCA GATACGTTCC AAAAGACGCT CTCTAGTCAG	1620
TGTCATGTTG GGATGTTTCA TAAGATAGAG CAAGAGTTCA AATTCTTTTG GGGTCAAAC	1680
CAGTAACTTA TTCGCCTTGT AGACTTCATG ACGCTCAGGG TATACTTTCA AGGTCCCAA	1740
TAGCCAAGAA TCGTCAGCGA TATTATCTGA ATCATCTCCT TCTTGTTCTC CTTTAGTTTG	1800
CCTGAGGACA GCCTTGACAC GCGCCAGCAA TTCTCTAGGG CTAAAAGGCT TGGTCAGGTA	1860
GTCATCAGCC CCTAATTCCA AGGCCAAAAC CTTATCAAAT TCATCACTTT TCGCAGAAAC	1920
CATCATAATT GGAGTTTGA CGCCTTTGGC TCTCAGCCGC TTACAACTT CCATGCCATC	1980
TAATTGTGGT AACATGATAT CAAGCAAGAT AAAATCAAAG GGTCTGTTT CTGCCAAAGC	2040
TAAGGCCTTC CGTCCATTG TCACCAATG AGTAGAAAAG CCTTCCTTAC TTAAATGGTA	2100
GTCAAGCAAT TTCAGAATG GTTCTTCATC ATCCACTAAT AAGACTTGTT TTGTCATCTA	2160

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TTATCTCCTA TTGGTAACAT TATAACACAA TTATCAGAAA TCCTAACATT GCTAAATCAG	2220
ATTAAATTTG CCTATCAAGA CTAGTATCTG GTCAAACGCT CAATCATCTC CTTGTGCTCT	2280
GGATAGGTCG CCAGTAGATC TACCCTTTCA AATAATTCAA AATCCTCAA TTCAAAACCA	2340
GGAGCAACAA GACAAGAAAC CAGAGCATCA TCCTTATCAA CTGTTGATCC CCAAATAGTG	2400
CCCTTAGGAA CACAGTAGTG AAGTTGTTGC CCTTTGGATA TGTCCAGGCC TAAAGTGACT	2460
GCTTCGTAGT GACCATCTGC TGTAATCATG TGAACAGTAA GTGGGGATCC TGCATGAAAA	2520
TACCAGATTT CATCTGCTGT CAATCGGTGA AAATGTGAAG GATTCGTTTC TTCTAATAAG	2580
AAATAAATAC TGGTATAAAG CGCCCTTCCC TTACCAGCAA GGTTTATAGT GTCTGAAGCT	2640
TTTTTTGTTT GTCTAAAATA GCCACCTTCA ATATGGGGAG CTAACCTAG AGTTCCTATC	2700
AAGTCTTCTT TATCCGTCGG AGCCAATGGG TTGAAGTAAC TCTTGTTCAA AGTGGTTTTA	2760
CGATTTCAAG AACTCCTCTC AGTTCGTAGG ACACGGTAAT GATTGATGCG ACGGAAGTAC	2820
AAATCAATCG CCCTAAAAA AGAATTAGCG AATGATTCTG GTAAAAAAA TGCCACGCTA	2880
TGAAGGCTCA AGCGATTGTC ACAAGTCAAG GGAGAATTGT TTCTTTGGAT ATCGCTGTGA	2940
ACTATTGTCA TGATATGAAG TTGTTCAAAA TGAGTCGCAG AAATATCGGA CAAGCTGGTA	3000
AAATCTTGGC TGACAGTGGT TATCAAGGGC TCATGAAGAT ATATCCTCAA GCACAACTC	3060
CACGTAAATC CAGCAAACTC AAGCCACTAA CAGTTGAAGA TAAAGCCTAT AACCATGCGC	3120
TATCCAAGGA GAGAAGCAAG GTTGAGAACA TCTTTGCCAA AGTAAAAACG TTAAAAATGA	3180
TTTCAACAAC CTATCGAAAT CATCGTAAAC ACTTCGGATT ACGAATGAAT TTGATTGCTG	3240
GCATTATCAA TCATGAACTA GGATTCTAGT TTTGCAGGAA GTCTATTATT TGGTTAGGTG	3300
AATTAGTGAA GCGTTTAGGC AAGTGTCTCT GGTACGACG TCATGGACTC TAAATCGATT	3360
ATATTTAGGG GTCATGACTA GTGAAGCAGT TAGCTAGTTC GCATATAAGC GGCTAGCGTC	3420
TAACAATTAG GAACTTTAGT TCCAATAACT TTAAGATTAC GACGTTTLAG GACATAAATC	3480
GATCATATTT ATGTCCTAAA ACTAGTGAAG CGCCTAGCCA AAGTCCGAAT AGGATTGTC	3540
GTAGTTACT TAGATTGCTT TGCAATCAAG TAACTTTGGC GATTTACATC TTCTCTGGCG	3600
CTTCTACTCC AAGCAAGCGA AGGGCTTCTT TGAGAACGAC TGCGGTGCG TAGCTGAGGG	3660
CTAGACGGCT GTCGCGTTCT GGGCTTTCAT CCAAGATACG TGTATGTGCA TAGTATTTGT	3720
TAAAGGATTG AGCCAGGCTA ATTGCAAAT TAGCAATGAT AGAAGGTTC AAGTTATCTG	3780
CCGCACGGTT GATAATACGT GGAAGTCTT GAATGAGTTT AATGATTTCC CAGCTTTCAG	3840
TATCATTCOA GCTATAGTTG CCAGCTGTTT CTGGTTTGAA ATCGGCTTTG CGTAAGATAG	3900
ATTGGATACG AGCGTAGGCA TATTGAACGT AAGGTCCAGT TTCACCCTCG AAGGATACCA	3960

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TAGCCTCTAG GTCGAAGTCG TATCCATTTG TACGGTCGGT TTTGAGGTCA TAGAATTTAA	4020
TGGCTCCAAT CCCAACAGCA TGTGCTACTT GGTCTTTGTT TTCTAGTTCA GGATTTTATAG	4080
CCTCGATTTG GACCTTGGCA CGGCTAACAG CCTCTGCAAC AGTAGGCTCT AGCAAGATGA	4140
CATTCCCTTT ACGAGTAGAG AGTTTCTTCC CTTCTTTTGT AACCAAACCA AAAGGAACGT	4200
GAGTAATGTC GTCACCTCCAG TCGTAGCCCA TCTCTTGCAA GACAGCTTTG AGCTGTTTAA	4260
AGTGGGCAGA TTGTTCTTGA CCAACGACAT AGATAGATT T AGCAAATTGG TATTCTGTTT	4320
TACGGTAGAG GGCTGCAGCC AAGTCACGTG TGATATAGAG AGTTGCACCA TCAGACTTCT	4380
TGATAGAGGC TGGATGTTCA ATTCCATATT TCTCAAGATT CACAACTTGG GCACCTTCTG	4440
ATTCAAGAAG TAGTCCTTTT TCAGAAAGAA TGTCTACAAC TGCATCCATC TTATCATTGT	4500
AGAAGGCTTC TCCGTATATAG CTGTCAAATT CAACCTTCAA TTCATTGTAA AGGCGGTAA	4560
ATTCCACTAA ACTTTCATCG CGGAACCATT GCCAAAGAGC GAGAGCTTCC TCATCTCCAT	4620
TTTCAAGTTT ACGGAACCAT TCGCGCGCTT CTTTCATCCAA GCTAGGGTCA TTTTCAGCTT	4680
CAGCGTTGAT GCGGACATAG AGTTTAAGGA GTTCATCGAT TGGATGAGCT TTTACAGCTT	4740
CTTCGTCGCC CCATTTTTTG TAGGCAACAA TCAACATCCC AAATTGTTTA CCCCAGTCTC	4800
CCAAATGGTT GACCTTGACC GTTTGATAAC CGATTTTTTG GAAAATATGT GACAAGCTAT	4860
CTCCGATAAC AGTTGAACGC AGGTGGCCAA TAGAAAATGG TTTAGCGATA TTCGGACTAG	4920
ACATGTGCGAT AACAACATTT TCTTGTTTAC CAATATTTTG GTCAGCATAG TGTCTTTTTT	4980
CAGTGGAAC AGCTTGCAAT ACTTGAGCAG AAATGGCAGA TTTATCAAGG AAAAAGTTAA	5040
CGTAAGGTCC TGTTGCGACA ACTTTTTCAA AGGCTTGGCT GTTCATTTTT TCAGCCAGTT	5100
CAGCCGCAAT CATTGTGGT GCTTTACGTT CGACTTTTGC AAGAGAAAAA GCAGGGAAAG	5160
CAATGTCTCC CATTCTGAG TTTTATAGGG TTTCCAGTAA CTTTAAAATA GCCTCTTGGT	5220
CCAGGCTATC AATGATGCTA GATAATTCGC TAGCAATCAA TTCTTTTGTA TTCATTAAGA	5280
GCTCCTTTTT GGACTTTTCT ACTATTTTAT CACAATTTTA AAGAAAGAAG AAAAAATTTT	5340
TGAAATCTCC TGTTTTTTTG GTATAATATG GTTATAAATA TAGTTATAAA TATGCACGCA	5400
AGAGGATTTT ATGAGAAAAA GAGATCGTCA TCAGTTAATA AAAAAATGA TTAAGGAGGA	5460
GAAATTAAGT ACACAAAAAG AAATTCAAGA TCGGTTGGAG GCGCACAATG TTTGTGTGAC	5520
GCAGACAACC TTGTCTCGTG ATTTGCGG	5548

(2) INFORMATION FOR SEQ ID NO: 110:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 3132 base pairs

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(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 110:

TACCCGGTAG TCTTAGCAGA CACATCTAGC TCTGAAGATG CTTTAAACAT CTCTGATAAA	60
GAAAAAGTAG CAGAAAATAA AGAGAAACAT GAAATATATCC ATAGTGCTAT GGAAACTTCA	120
CAGGATTTTA AAGAGAAGAA AACAGCAGTC ATTAAGGAAA AAGAAGTTGT TAGTAAAAAT	180
CCTGTGATAG ACAATAACAC TAGCAATGAA GAAGCAAAAA TCAAAGAAGA AAATTCCAAT	240
AAATCCCAAG GAGATTATAC GGACTCATTT GTGAATAAAA ACACAGAAAA TCCCAAAAAA	300
GAAGATAAAG TTGTCTATAT TGCTGAATTT AAAGATAAAG AATCTGGAGA AAAAGCAATC	360
AAGGAACTAT CCAGTCTTAA GAATACAAAA GTTTTATATA CTTATGATAG AATTTTTAAC	420
GGTAGTGCCA TAGAAACAAC TCCAGATAAC TTGGACAAAA TTAACAAAT AGAAGGTATT	480
TCATCGGTTG AAAGGGCACA AAAAGTCCAA CCCATGATGA ATCATGCCAG AAAGGAAATT	540
GGAGTTGAGG AAGCTATTGA TTACCTAAAG TCTATCAATG CTCCGTTTGG GAAAAATTTT	600
GATGGTAGAG GTATGGTCAT TTCAAATATC GATACTGGAA CAGATTATAG ACATAAGGCT	660
ATGAGAATCG ATGATGATGC CAAAGCCTCA ATGAGATTTA AAAAAGAAGA CTTAAAAGGC	720
ACTGATAAAA ATTATTGGTT GAGTGATAAA ATCCCTCATG CGTTCAATTA TTATAARTGGT	780
GGCAAAATCA CTGTAGAAAA ATATGATGAT GGAAGGGATT ATTTTGACCC ACATGGGATG	840
CATATTGCAG GGATTCTTGC TGGAAATGAT ACTGAACAAG ACATCAAAAA CTTAACGGC	900
ATAGATGGAA TTGCACCTAA TGCACAAATT TTCTCTTACA AAATGTATTC TGACGCAGGA	960
TCTGGGTTTG CGGGTGATGA AACAATGTTT CATGCTATTG AAGATTCTAT CAAACACAAC	1020
GTGATGTTG TTTCGGTATC ATCTGGTTTT ACAGGAACAG GTCTTGATAG TGAGAAATAT	1080
TGGCAAGCTA TTCGGGCATT AAGAAAAGCA GGCATTCCAA TGGTTGTCGC TACGGGTAAC	1140
TATGCGACTT CTGCTTCAAG TTCTTCATGG GATTTAGTAG CAAATAATCA TCTGAAAATG	1200
ACCGACACTG GAAATGTAAC ACGAACTGCA GCACATGAAG ATGCGATAGC GGTGCTTCT	1260
GCTAAAAATC AAACAGTTGA GTTTGATAAA GTTAACATAG GTGGAGAAAG TTTTAAATAC	1320
AGAAATATAG GGGCCTTTTT CGATAAGAGT AAAATCACAA CAAATGAAGA TGGAACAAAA	1380
GCTCCTAGTA AATTAAAATT TGTATATATA GGCAAGGGGC AAGACCAAGA TTTGATAGGT	1440
TTGGATCTTA GGGGCAAAAT TGCAGTAATG GATAGAATTT ATACAAAGGA TTTAAAAAAT	1500
GCTTTTAAAA AAGCTATGGA TAAGGGTGCA CGCGCCATTA TGGTTGTAAA TACTGTAAAT	1560

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TACTACAATA GAGATAATTG GACAGAGCTT CCAGCTATGG GATATGAAGC GGATGAAGGT	1620
ACTAAAAGTC AAGTGTTTTT AATTTCAGGA GATGATGGTG TAAAGCTATG GAACATGATT	1680
AATCCTGATA AAAAACTGA AGTCAAAAGA AATAATAAAG AAGATTTTAA AGATAAATTG	1740
GAGCAATACT ATCCAATTGA TATGGAAAGT TTTAATTCCA ACAAACCGAA TGTAGGTGAC	1800
GAAAAAGAGA TTGACTTTAA GTTGCACCT GACACAGACA AAGAACTCTA TAAAGAAGAT	1860
ATCATCGTTC CAGCAGGATC TACATCTTGG GGGCCAAGAA TAGATTTACT TTAAAAACCC	1920
GATGTTTCAG CACCTGGTAA AAATATTAAA TCCACGCTTA ATGTTATTAA TGGCAAATCA	1980
ACTTATGGCT ATATGTCAGG AACTAGTATG GCGACTCCAA TCGTGGCAGC TTCTACTGTT	2040
TTGATTAGAC CGAAATTAAA GGAAATGCTT GAAAGACCTG TATTGAAAAA TCTTAAGGGA	2100
GATGACAAAA TAGATCTTAC AAGTCTTACA AAAATGCCCC TACAAAATAC TGCGCGACCT	2160
ATGATGGATG CAACTTCTTG GAAAGAAAAA AGTCAATACT TTGCATCACC TAGACAACAG	2220
GGAGCAGGCC TAATTAATGT GGCCAATGCT TTGAGAAATG AAGTTGTAGC AACTTTCAAA	2280
AACACTGATT CTAAAGGTTT GGTAACCTCA TATGGTTCCA TTTCTCTTAA AGAAATAAAA	2340
GGTGATAAAA AATACTTTAC AATCAAGCTT CACAATACAT CAAACAGACC TTTGACTTTT	2400
AAAGTTTCAG CATCAGCGAT AACTACAGAT TCTCTAACTG ACAGATTAAA ACTTGATGAA	2460
ACATATAAAG ATGAAAAATC TCCAGATGGT AAGCAAATG TTCCAGAAAT TCACCCAGAA	2520
AAAGTCAAAG GAGCAAATAT CACATTTGAG CATGATACTT TCACTATAGG CGCAAATCTT	2580
AGCTTTGATT TGAATGCGGT TATAAATGTT GGAGAGGCCA AAAACAAAAA TAAATTTGTA	2640
GAATCATTTA TTCATTTTGA GTCAGTGGAA GCGATGGAAG CTCTAACTC CAGCGGGAAG	2700
AAAATAAACT TCCAACCTTC TTTGTCTGAT CCTCTAATGG GATTTGCTGG GAATTGGAAC	2760
CACGAACCAA TCCTTGATAA ATGGGCTTGG GAAGAAGGT CAAGATCAAA AACACTGGGA	2820
GGTTATGATG ATGATGGTAA ACCGAAAAT CCAGGAACCT TAAATAAGGG AATTGGTGGA	2880
GAACATGGTA TAGATAAATT TAATCCAGCA GGAGTTATAC AAAATAGAAA AGATAAAAAT	2940
ACAACATCCC TGGATCAAAA TCCAGAATTA TTTGCTTTCA ATAACGAAGG GATCAACGCT	3000
CCATCATCAA GTGGTTCTAA GATTGCTAAC ATTTATCCTT TAGATTCAAA TGGAAATCCT	3060
CAAGATGCTC AACTTGAAAG AGGATTAACA CCTTCTCCAC TTGTATTAAG AAGTCAGAA	3120
GAAGGATTGA TT	3132

(2) INFORMATION FOR SEQ ID NO: 111:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 14672 base pairs

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(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 111:

CGAGATTTCT TTAAATGAAC TACGTGAAAT CTACCCATCA TCCAGATCTG GATATTCTCT	60
CCTATCTATA AGTAAAGTTT TAGGAGATTT TAATATAAGT TCTCATGCTT TTAAAGCTTC	120
GGTAAGAGAT TAAAACCGC TCAGTTTCCC ACTCATTTGC TTCTGGGAGA GTTCTCATT	180
TATTATCTTT GAAAAATTA GTAAAAACAA GTTTTATATT TTAGATCCTG CAAAAGGCAG	240
GCAGAGAATG TCAATAAGTG AATTTGAAAG GCATTATTCA AATATCATTT TAACATTTAA	300
AAAGTTAGAT AGCTTTATGT CTCGTAAAGA TAATAAGAAG TCGCCTGTTT TAAAGTATTT	360
TTTTAAGTAT AGGAATAAGC TAGGGATTTT ATTTTGTGTA ACAGCATTAT TGTATGTAAT	420
ACAATCATTG GTACCTATAG CTAATAGATA CATAATTGAC ACGAATTTCAG AGGACGATTC	480
GTATTCGCTC AGAATGTTAT TACTATATT ATTTATATTT ACTGTTTCAT TCTCACTAAT	540
GTATTTATTA AGACAGATAT ATGTTGCATC CTTAAAATAT ATAATGGATA AAGAGATTAG	600
CTATGATTTT ATGAAACATT TGATATATTT ACCTTACAGT TTTTATGAAA AACGTACTTT	660
AGGGGATATA CTTTTTAGAG CTAACCTCTAT TGTTTATATA AGAGAAATAC TATCAAATAA	720
TTTTATAGCA GCTATACTTG ATTTGTTAAT GATTGTGGTT TATGCTGTGG TTTTATTTAG	780
CTTTTCTAAG TACATGGTAA TCTTTTAAAT ATCACTAAGT CTAGCTCTAT CTATTGTAAT	840
GTATCCAATC ATAAAAATCT CAAAAATTT AATTGATAAA AATATAAAAG AAAAGGTTAA	900
TGTTCAAAAT ATTACTTCCG AAGTAATTC TAAAAATAGT GATATTAAGC TAACTGGAGA	960
AGAGGAATTT TGGATTACA AATGGGATAA TTTAATACA AAACAGCTCA TCATAGGTCG	1020
AAAACCTGAT ATACATTTAT CAATTGTTAG TAGTATAACG AATGTTTAC AAATTATTCT	1080
CCCTGTTTTG ACCCTTATTG TAGGTGTAAA TATAAAAACA TTCGAACAAT TGACGTTAGG	1140
ACAAATTGTA GCAATAAGTA CAGTCTCACC ATACTTTATT TCTCCTATAA TTTCTTTAAG	1200
TGATAACTAT ATACAATTAA TGTATTAAA GGGATATTTT TTAAGAATAG AGGATGTGTT	1260
TAATACTAAA TCCGAATTAA TTCCAGAAAG AGTCAGTCAA GATATAAAAT TTGATAAAAA	1320
AATAGAATTA AAAGATATTT GGTATAAATA TGGATTATTT GATGATTATG TTTTGAAAGG	1380
AATAAATGTT ACTATTAAAA AAGGAGAAAC TGTGCTATT GTTGAGAAAT CAGGTTTCAGG	1440
TAAGAGTACA TTAGCTAAAA TTTTATTAGG TTTATTAGAA CCTAATATTG GTTCAATAGA	1500
AGTTGATGGA GTAGAAAAAG AAGAAATGG TCAAACATTG TATAGAAAGA TTTTGGAGC	1560

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AGTGTTACAA AATTCAACCC TAAGTTATGG TACCTTAAGA GAGAATTTGA CATTTGGACA	1620
CTTTGTTTCA GATGAAGAAT TAATGACAAA TCTAAATTCA ATTGGTCTTA GCAATGTAGT	1680
TAAATCTTTA CCTCTTGGAT TAGAGACAAT CATCGCTGAA GAAGGTAATA ACTTTTCTGG	1740
AGGGCAGCAG CAAATGATAC TTTTAGCTCG TTGTCTTTTG TCGAAACCTT CGGTAGTTGT	1800
TTTGGACGAA GCAACAAGTA GTTTAGATAA TTTATCTCAA CAAATTACAA CTCTTACTT	1860
AAGTGAAATC GGTACCACTA AGATTTTAAT TGCCCATCGA CTAGATACTA TCAAGTCTGC	1920
AGATAAGATC TTAGTAATGC ATAATGGTGA AATTGTAGAG ATTGGGACCC ATAGAGAACT	1980
TCTTGAAC TA GGAGGCATTT ATAAGCAATT GTATTCAAAT AATTAGTTTT TGATTAAAAG	2040
GGTAAATTTA TGAAGATTAT GAAAAAAAAA TATTGGACTT TAGCGATATT ATTCTTTTGT	2100
TTGTTCAATA ATTCTGTAC TGCTCAAGAA ATACCTAAAA ATCTTGATGG CAATATAACT	2160
CACACTCAGA CTAGCGAAAG TTTTCTGAA TCTGATGAAA AACAGGTGA CTATTCTAAT	2220
AAAAATCAAG AAGAAGTAGA CCAAAATAAA TTTCGTATTC AAATCGATAA GACAGAATTA	2280
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AAAGATAACT TAGAATCGTC GATTGTAAGA AAATATGAAT GGGATATAGA TAAAGTTACT	2520
GGTGGAGGCG AAAGTTATAA ATTATATTCT AAAAGTAATT CTAAAGTTTC AATTGCTATT	2580
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TCAGATATTC AAGATAGATT AGGTCATGGT ACGGCTGTTG TAGCTCAAAT TGTAGGGAT	2760
GACAAATTA ATGGAGTAAA TCCTCACGTT AATATTAACG TCTATAGAAT ATTTGGTAAG	2820
TCGTCAGCTA GTCCAGATTG GATTGTAAAA GCAATTTTGT ATGCTGTAGA TGATGGCAAT	2880
GATATTATCA ATCTTAGTAC TGGACAATAT TTAATGATTG ATGGAGAATA TGAGGACGGA	2940
ACAAATGATT TTGAAACATT TTTGAAGTAT AAAAAGGCTA TTGATTACGC GAATCAAAAA	3000
GGAGTAATTA TAGTAGCTGC ATTAGGGAAT GACTCCCTAA ATGTATCAAA TCAGTCAGAT	3060
TTATTGAAAC TTATTAGTTC ACGCAAAAAA GTAAGAAAAC CAGGATTAGT AGTTGATGTT	3120
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GATTTTAGCA ATAAAGGGGA TTCTGATGCA ATATATGCGC CTGCAGGCTC AACATTATCT	3240
CTTTCAGAAT TAGGACTTAA TAACTTTATT AATGCAGAAA AATATAAAGA AGATTGGATT	3300

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TTTTCGGCAA CACTAGGAGG ATATACGTAT CTTTATGGAA ACTCATTTGC TGCTCCTAAA	3360
GTTTCTGGTG CGATTGCAAT GATTATTGAT AAATACAAAT TAAAAGATCA GCCCTATAAT	3420
TATATGTTTG TAAAAAATT CTGGAAGAAA CATTACCAGT AAAAAATGGT ATAAAAGTGT	3480
TAAATATACC AAACGTATTG AGATATGATT TGAATATGTT ACAATTAGAA TATAAAAATG	3540
AACAAAGTTG GGATAGTTTC ATAGATAATG TTAATTTAAT TGAGTTGGAA GAGAGAATTC	3600
AAACTACTAT TGGAAATAAA CAAATAAACA CACACAATAT TATTACTATT GCCCGAGAAG	3660
GGTACTCTCA AAATTATTTA CCTAACACTT CAGAAAATAC ATATAATTCA TTACAAGTCA	3720
GTTTAGTTGG AGTATTACTA CTTTTTATAA GTATGGTAAA TATTTTATGG GCTAAAAAAA	3780
GTAAATGAAA ATAAAATTTG GAGCCCTCTG AAAAAGTAAG TCCTACAGTT CAACTAAAA	3840
GAGTCAAAAG ATGAATCACC TTGATGTAGG GGAGTTTGTG TTATTGCTGC CTGAACACCT	3900
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TAGTCAAGAT GAACGACAGC AAATGACTGC TACGGTAGGT TATTTAGAAT CAGGTCAGGA	4020
TCGTTTTGTG TATAATACGA CCCCTATTTT TTACCAGCAG TTTTGAAG ATCCAATCAT	4080
CATTGTTATA ACACCCCAAT CAACTGGTCC ACAGTCCATT TTGTTTTGGA TAGACGCAGT	4140
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TGGCAAAAAT TATCTTAAAG AATCCACCCT TTATTCTGGC AGATGAGCCA ACAGCTTCAA	5100

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CGATGGATCA TCTGAAATAA AAATCCTTGT TTTTAATTGC ACGATGAGTT ACTGAAATAT	5280
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GAAACAAGAA CAGGATAAAA GAACCTTTTG TGCCATATTT TTCTCCTTTC GCTTTACAAT	5940
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TAAACTAATT GACTATACTT TCTATTCAAA TGAGCTTTTA ACCAATTGAT TGAGCCAATC	6180
CACTCTTAAA ACCAAAGAGC AATTTCTCGC TTAGCTGACT CTTCTGAATC TGAACCATGT	6240
ACAACATTTT GGATAATCTC ATTTTCTCCA GCAGCTTTTG CAAAATCACC TCGAATAGTG	6300
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CCCGTCTCCT TTGTCAGCTT CTTTCTTTTA TTTTACCACA TTTCGTGGAA AAATGGAGAA	6660
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CTTCTCTTAC TGGAGGATTA AGGTATTCTT CTTCTGTGAC AGCATGTGGT TCAAGGTTAC	6840

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GTCCAAGGAG ATGGTCTTTC TTACCACGGA TAGCTGCGTC AGTAAGGACA CGAGTTGTTT	6960
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CTGTAAAGTC ATTGATATCC ATGAGGGTAC CCATGAGAAG ATCTGTATCA CCTGGATCCA	7140
TGACACGGAC TTTACGGATC ATTTGACGAA CCATTACCTC GATGTGTTTG TCACCGATTT	7200
CTACCCCTTG GCTACGGTAA ACTTTTGTGA CTTACCCGAG AAGGTACGTT TCAACTGACA	7260
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CACGCGCTAC TTGGCCCCCA ACTTCGACAC GCATACGAGC TGTAAATGGA ACGACATATT	7380
CACCTTCGCC AGTTTCACCC TTAACAAAGA CTTTCTTGGT ACGAGTTGAT GCATCTTCTT	7440
CGATAGCAGT AACTTGCTCT TTAACCTCTG TAATAACCGC TTCCCTTTA GGATTGCGGG	7500
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CACCTGTGTG GAAGGTACGC ATTGTAAGCT GTGTACCAGG TTCCCCGATA GATTGGGCAG	7620
CGATTGTACC AACTGCTTCA CCAACTTCAA CCGCATCACC AGTCGCCAAG TTGATACCGT	7680
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GACGAGTCAA GTAACCTGAG TCGGCTGTCT TAAGGGCCGT ATCGGTCATA CCTTTACGAG	8040
CACCGTGAGT TGAGAAGAAC ATTTCCAATA CCGACAAACC TTCGCGGAAG TTTGAAAGGA	8100
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TGATATCTCC ACCAAGTGGC AAGAAGTATT TAGCTGGAAC ACCTTCTGTC AAGTTGGCAT	8640

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CACAAGCACA TTCCAGTCT TTTGTAGGAC CAAAGATCAC TTCATCAAAG AGTCCTTCAC	10260
GTCTGCTT CAAGGTACGA TAATTGATTG TTTGAGTTT TTTGACTTCT CCATAAGACC	10320
ATGAACGGAC TTTACTTGA GAAGCTAGGG TGATTGTCAT ACTTTTAAAA CGATTTACAT	10380

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CAACCACTAT TTCTTCCCTT TCTATTCTAA GTGAAC TGCT TATTCTTGTT CAGCAGCTTC	10440
TTCTGTGCT TCCGCTTTTG TTGCTTTCTC AGCTTCTTCA GCTTCAAAGG CTGCTTTAGC	10500
CTCTTGGGCT GCTTTTTCGC GGGCTTTTTC AAGGTCATCT ACGTGGATGA CATCTTCGTC	10560
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ACCTGAGTTT GAACGACGGA ATTTTGGAT GTGGTAAACA TCCAATGAAC CATCTTCACG	11940
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GTCATCGTTT TCCAAGAAAG GAATACATGC TGTCGCAACG GCAACTACCT GTTTTGGTGA	12180

AACGTCCATG TAGTCAACAA TATTAGCTGG ATACTCTTGG TTGACCCCTT GGTGACGTCC	12240
CATGACAATC TTCTCAGCAA AGGTTCATC TTCATTCAGA CGAGAGTTAG CCTGAGCTAC	12300
AGTATATTCA TCTTCTTCAT CAGCTGTCAA CCAAACAATT TCGTTCGTGA CAACACCTGT	12360
TTACCGGTCA ACCTTACGGT ATGGTGTGTTG AACAAAACCA TATTTGTTCA AGTGTCCTATA	12420
AGATGACAAG TTATTGATCA AACCGATGTT AGGTCCTTCA GGTGTCTCGA TTGGACACAT	12480
ACGACCATAG TGAGTGTAGT GCACGTCACG TACTTCATAT CCAGCACGGT CACGAGTCAA	12540
ACCACCAGGT CCTAAGGCTG ACAAACGGCG TTTGTGAGAC AACTCAGAAA GCGGTTGTG	12600
TTGGTCCATG AACTGTGACA ACTGTGATGA ACCAAAGAAT TCTTTAACTG CAGCTGTTAC	12660
AGGACGGATA TTGATAATTT GTTGTGGTGT CAAGACTTCA TTGTCCTGAA CAGACATACG	12720
TTACGGACA TTACGTTCCTA TACGAGAAAAG TCCCAAACGT ACTTGGTTGG CAAGCAATTC	12780
ACCAACCGCA CGGATACGAC GATTTCCAAG GTGGTCGATA TCATCTACAC GGCCAAGTCC	12840
TTACGCCAAG TTGAGGAAGT AGCTCATCTC AGCAAGGATA TCTGCAGGAG TCACCGTACG	12900
AACCTTGTC TCTGGGTTAG CATTACCAAT GATCGTTACG ACGCGATCTG GATCAGTTGG	12960
AGCAATAACC TTGAATTTTT GAAGAACAAC AGGCTCAGTC ACAACGGCTG CATCGTTTGG	13020
GATGTAGACA ATCTTGTTCA AGTCGCCATC CAAATGGCTT TCAATGCTTT CAATCACGCT	13080
ACGAGTCATA ATCGTACCAG CTTCTACCAA GATTCTCCA GTTTCAGGGT CTACCAATGG	13140
CTCTGCAATG GTTTGGTTGA GCAAACGTGT TTTAACATTG AGTTTTTTAT TGATTTTGTA	13200
ACGACCAACT GCTGCCAAGT CATAACGACG TGGGTCAAAG AAGCGAGCTA CAAGCAAGCT	13260
ACGTGAGCTT TCAGCCGTCT TAGGCTCACC TGGACGAAGG CGTTCGTAAA TTTCTTTCAA	13320
GGCTTCGTCT GTACGAGAGT CCATTGGATT CTTGTGGATA TCTTTTCAA CAGTGTTGCG	13380
AACCAATTCG CTGTCACCAA AGATATCAA GATTTCATCA TCACCTGAGA AACCAAGAGC	13440
ACGAACCAAG GTTGTAATG GAATCTTACG AGTACGGTCG ATACGAGTGT AGGTGATATC	13500
TTTTGAGTCG CTTTCAAGTT CCAACCAAGC TCCACGGTTA GGGATAACAG TTGAACCATA	13560
GCCCACCTTA CCATTTTGT CTACTTTGTC GTTAAAGTAA ACACCTGGTG AGCGGACCAA	13620
CTGAGAAACG ATAATACGTT CACCACCATT GATGATGAAA GTACCCATTT CTGTCATGAT	13680
TGGGAAATCA CCAAAGAAAA CTTCTTGGGT CTTGATTTCG CTTGTTTCTT TATTGATCAA	13740
ACGGAAGGTT AAAAAATTG GTGCTGAGTA GCTAGCATCG TGGATACGAG CTTCTTCTAG	13800
CGTATATTTT GGTTCTTGA TTTTCATATCC AACAAATCC AACTCCATTG TGTCTGTGAA	13860
GTTTGAAATT GGCAATACAT CTTCAAACAC TTCCTTAAGA CCGTGGTCTA GGAAAGCTTT	13920

814

GAATGAGTCA GTTTGAATTT CAATCAAATT TGGTAAGTCA AGAACTTCTT TGATTCTTGA	13980
AAAACACGA CGGGTACGAT GTTTCCCGTA TTGAACGTCA TGTCTGCCA AGATGATTCT	14040
CCTTTGTAAA TAAGTTCCAA GCCTTGTCAA TCAGGCTTTT CTAATCGTCA TATGGTTGTA	14100
AACCCCTTAT CACCGTGTC TCTTGACGAA TTTTCAGAAT CTTTAAGCCT CTGTTACAAA	14160
TGCTCAAAAT CTTGAAAAA AGCACAAAA GAGCAGCTAA ATCTGACTTT TTCAGAAGAT	14220
TTAACTGCTG TGAGCCTTGT CTGGACAATA TTTGAGACAA AACCTACGAC AAATGATTAC	14280
CCATATTATA CCCTATTTAG CTAGATTTTT CAAGGGGTTT CAGTAGGTTT TTGGTAAATT	14340
TTTTCCCATG GAAACTTGG CATCACATTC GAATCACGCT ATGGTACAAA AACTGAAAA	14400
AACTATTGAC TGAAAATCAT TTTCAAGGTA TAATAATAAA CGTTAAGGCG GTATAGCCAA	14460
GTGGTAAGGC ACGGCTCTGC AAAAGCTTGA TCGTCGGTTC AAATCCGTCT ACCGCCTTCT	14520
ATAACTTGAT TTATCAGGTT TCAAATGAAC AGAAAGCCCA ATTTGAAGGG CTTTTTTTAT	14580
TTTCCCTCGA ATAAATACGT ATAACTTTAA AACTTTTGG AGCGAGTTTG TGGCAGAGTT	14640
CTTTCCATGG CATAATTCCC TTTTGAAATC AG	14672

(2) INFORMATION FOR SEQ ID NO: 112:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 7902 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 112:

AGGAGACTAT TCAAGCCCAA ATTgAGTAGC CCAGCAAAGA CTGTATAGAC TGTGATACGT	60
TTTTTCATAGC CATTGGTAAA GAGAATTTGG GAACCAAGAA TGGTATCTAA GGCCAGGATA	120
ATCGTACGAA AAGCGAAGAG AGAGGTCAAG ATGCCGCCTC CGATATATTT TTTACTACCG	180
TAAAGTAGGA TGGCATTGTT TCCTAAAACC ATGAGTCCAA AACTCAGTGG AATGATAAAG	240
AAGTTAAAGA TTCGACTACC TCTATTAACC AGAGAAACAT AGGCTTCTTT GTCTCCTTTC	300
CCCAGATAGT AACTGAGACG AGGCACACTC ACTCCAATTG CACCTGTTAC AACCCAGCT	360
ATAACGGTCA CAATTCGCTG AGCTATGGTA TAGTAACTAA CGTTGACATC AATCCCTGTT	420
TTAACGAGGA AGAGGCGATC TAAAAAAGTG AAGAGCATAT TGGCATTGGC AAAGACTAAC	480
ATGGCTGTCA GAGGGAGAAA GAGTGGTTTA AAATCACTTA GGTGAATTTT AACAAAGTTT	540
ATGTCTCTTT TAATCCAAAA ATAACAAATC AGGTAGTTAA TCAGCGTCGA TAAACTCATC	600
ACAAGTGTAT AGACAACAAT ATCGTGTTCA TTTTAAACAA ATAAGAAAAT AGAGACCAGC	660

815

ATCAGGATAC GGATGAAGGC AGTTTGTAA AAGAGAAAAC TGTAATTTTC CAGAGCTTCA	720
TTGACCCATT CGATTGAAAA AATCTGGGCA ATGAGTTGAA TCCCCATAAC AAGGTAGACC	780
TTTTTGCAGC TTGGATTATC AGTAAAGAAG AGAGGATAGG CTAGGATATA GACAGCAGTG	840
GTCAAAATCG TACAAGCGAT GCACAAATAA AAAAGACTAG AAAAGGTCTCT GTTAAGATCT	900
TTTTTGTAT CCTTGACATT ACTGATAGCC CTTAAACCGT AGTTATAGAC ACCATAAGTT	960
GCAAAGGGCA AGAAAAATGA CAAAATAGTG TCGACTGAGT TGAAGTAACC ATAGTCAGTT	1020
CGGTCCAAGA CACGCGCGAC ATAGGTTCCA GTTAGGATGG GAAAAATAAT ATTCAAGACA	1080
CGAATTCCCA TGTAAGATAG AGCATTTAAT TTTATACTTT TCATTCAATT TACCTCGTTT	1140
TTTATATAT CATAAGTTA GCTAATAAGA AATGAAGGGC AGTAAGTCAA GTAATCACTT	1200
TGAAGTTTCA AATCTTAAGT TTTAAGTTTT CTTAAGGAA AGTATATTAT TCTGAAGGAC	1260
TCTAAAATTT CGCAGCCATT TATTAGTAAT TGCTACAGAA TTCCTAGTCA TTAGTAGAAA	1320
TGGACTAGTT TCTTTGAATA ATAGAACTGC ATAATTCTCC TATTCTAGAA GGGGAGGACC	1380
AGTATTCTTT TTATGATAGG ACTAGATTGT GGTATAATAG AGAGAATAAG TTTTTTTAGT	1440
AAGACAAAGG AGAAAATAGA TGATTTATGC AGGAATCTTT GCCGGTGGAA CTGGCACACG	1500
CATGGGGATC AGTAACTTGC CAAAACAATT TTTAGAGCTA GGTGATCGAC CTATTTTGAT	1560
TCATACAATT GAAAAATTTG TCTTGAGGCC AAGTATTGAA AAAATGTAG TTGGTGTTC	1620
TGGAGACTGG GTTCTCATG CAGAAGATCT TGTAGATAAA TATCTTCCTC TTTATAAGGA	1680
ACGTATCATC ATTACAAAGG GTGGTGCTGA CCGCAATACA AGTATTAAGA ACATCATTGA	1740
AGCCATTGAT GCTTATCGTC CGCTTACTCC AGAGGATATC GTTGTTACCC ACGATTCTGT	1800
TCGTCCATTT ATTACACTTC GCATGATTCA GGACAATATC CAACTTGCCC AAAATCATGA	1860
CGCAGTGGAC ACAGTGGTAG AAGCGGTGA TACTATCGTT GAAAGTACCA ATGGTCAATT	1920
TATTACAGAT ATTCCAAATC GTGCTCACCT TTATCAAGGA CAAACACCTC AAACATTCCG	1980
TTGCAAGGAC TTCATGGACC TTTATGGATC TCTTCTGAT GAAGAGAAGG AAATCTTGAC	2040
AGATGCATGT AAAATCTTTG TGATCAAAGG AAAAGATGTG GCTTTGGCCA AAGGTGAATA	2100
CTCAAATCTG AAGATTACAA CCGTAACAGA TTTGAAGATT GCAAAAAGTA TGATTGAGAA	2160
AGACTAGTAA AATGATTAAT CAAATTTATC AACTAACTAA GCCTAAGTTT ATCAATGTCA	2220
AATATCAGGA AGAGGCTATT GACCAAGAGA ATCATATCCT TATCCGTCCC AACTACATGG	2280
CTGTCTGTCA TGCGGATCAG CGTTACTATC AGGGAAAACG TGATCCCAAG ATTTTGAATA	2340
AAAAGCTTCC AATGGCAATG ATTCACGAGT CATGTGGAAC CGTCATTTCT GACCCGACCG	2400

816

GAACCTACGA GGTGGGTCAA AAAGTTGTCA TGATTCCCAA TCAGTCTCCT ATGCAGAGTG	2460
ATGAAGAATT CTATGAAAAC TACATGACAG GGACCCATTT CTTGTCTAGT GGATTTGATG	2520
GCTTTATGAG AGAGTTTGTT TCTCTCCCTA AAGATCGTGT GGTGGCTTAT GATGCTATTG	2580
AAGATACGGT TGCAGCCATT ACAGAGTTTG TCAGTGTGGG CATGCACGCT ATGAATCGTC	2640
TATTGACTCT TGCTCATAGC AAGCGGGAGC GGATCGCCGT TATTGGAGAT GGAAGTTTAG	2700
CTTTTGTGGT TGCCAATATT ATCAACTATA CTTTGCCAGA AGCAGAGATT GTGGTTATTG	2760
GTCGTCATTG GGAAAAGTTG GAACTCTTCT CATTTGCCAA AGAATGCTAT ATTACGGATA	2820
ATATTCCTGA AGATTGGCC TTTGACCATG CTTTGAATG TTGTGGTGGT GATGGTACTG	2880
GACCAGCTAT TAATGACTTG ATTCGCTACA TTCGTCCTCA GGGAACGATT CTCATGATGG	2940
GAGTTAGCGA ATATAAAGTC AATCTCAATA CTCGCGATGC CTTAGAAAAG GGCTTGATTT	3000
TGGTTGGGTC ATCTCGTTCT GGTGCGATTG ATTTTGAAAA TGCTATCCAA ATGATGGAAG	3060
TCAAGAAATT TGCCAATCGT CTTAAAAATA TCCTTTATCT AGAAGAACCT GTAAGAGAAA	3120
TTAAAGATAT TCATCGTGTC TTTGCAACCG ATTTAAACAC AGCCTTTAAA ACAGTGTTTA	3180
AGTGGGAAGT ATAAGTACTG GAGGTTAATT GTGGAGAAAA TCATTAAAGA AAAAAATTTCT	3240
TCCTTACTTA GTCAAGAAGA GGAAGTCCTC AGTGTGAAAC AACTGGGTGG AATGACCAAT	3300
CAAACTATT TGGCCAAAAC AACAAATAAG CAATACATTG TTAAATTCTT TGGTAAAGGG	3360
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GGCTTAGATG TAAAAAATTA TCTTTTGAT ATTGAAGCTG GTATCAAAGT AAATGAGTAT	3480
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CCAATATTAC AAATATTCA TACGTCTGCT AAGGAATTAA GAGGAGAATT TGCTCCTTTT	3600
GAAGAAATCA AAAAATACGA ATCCTTGATT GAAGAACAAA TTCCTTATGC CAACTATGAA	3660
TCTGTTAGAA ATGCAGTCTT CTCCTTAGAG AAAAGACTGG CTGACTTAGG TGTGACAGA	3720
AAATCTTGTC ATATCGATTT GGTGCCTGAA AACTTTATCG AATCACCTCA AGGACGACTT	3780
TATTTGATTG ACTGGGAATA TTCATCAATG AATGATCCAA TGTGGGATTT GGCTGCCCTC	3840
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TGGAGTCTAT GGAAGTCTA TAAGGAAGAG CAAGGTGAAG ATTTTGGTGA CTATGGTGTG	4020
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AAACGGAGTT CCTTTGGCC TTCTCTCAGG TATTTTCTGG GGCTTGGGTC TAACGGTTAG	4140
TGCTTATATC TTTTCGATTT TTACAGATTT GTCACCCTTT GTGGTGGCTG CAACTCATGA	4200

817

TTTTTTGAGC ATCTTTATCT TACTAGCTTT TCTCTTGGTA AAAGAAGGGA AAGTTCGCCT	4260
CTCAATTTTC TTAAATATTC GCAATGTCAG TGTTATCATC GGAGCCTTGC TAGCAGGCCC	4320
TATCGGTATG CAGGCCAATC TTTATGCAGT TAAGTATATC GGAAGTCTT TAGCTTCATC	4380
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GATTTGAAA AATACTGTAT TTGGGATTGT CTTGATTAT GGAGGGATTA TTGCTCAGAC	4500
CTATAAGGTT GAACAGGTTA ATTCTTTCTA CATTGGGATT CTTTGTGCTT TGGTTTGTGC	4560
TATTGCATGG GGAAGTGAGA GTGTTCTTAG CTCTTTGCC ATGGAAAGTG AATTGAGTGA	4620
AATCGAAGCC CTCTTAATCC GTCAAGTAAC TTCGTTCTTG TCCTATCTTG TGATTGTGCT	4680
CTTCTCTCAT CAGTCATTTA CTGCAGTAGC CAATGGACAA TTGCTAGGTC TCATGATTGT	4740
TTTTGCAGCC TTTGATATGA TTTCTTACTT GGCTTATTAT ATCGCTATCA ATCGCTTGCA	4800
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GCGGGATTGG GAACTCGCTT GCGTCCTATG ACTGAAAATA CCCCTAAAGC CTTGGTTCAG	5040
GTTAATCAAA AACCTTTGAT TGAGTACCAA ATTGAGTTTC TCAAAGAAAA AGGAATCAAT	5100
GACATCATCA TCATGTGTTG TTATCTTAAA GAACAATTCG ATTACTTGAA AGAGAAATAC	5160
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CTTGTAAGG AAGAATTGGC CAACAGCTAT GTTATTGATG CTGACAATTA TCTCTTTAAA	5280
AATATGTTCC GCAATGATTT GACACGTTG ACTTATTTTA GTGTTTATCG TGAAGATTGT	5340
ACCAACGAAT GGTTCCTGGT TTATGGAGAT GACTACAAGG TTCAAGACAT TATTGTTGAT	5400
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AATATGGTTA AGGATAATAT CAAAGAGCTA GATGTCTATG TTGAAGAATT AGAAGGCAAT	5580
AGCATTTATG AGATCGATAG TGTCCAAGAC TATCGTAAAT TAGAAGAAAT TCTTAAAAAC	5640
GAAAATTAAA GATTCCAACA TCTGACAAAA TAGTCGGATG TTTTGTGATT TTTTACGAAC	5700
TTTTACGAAT AGATAGATGA GTAGAAAAAG AAATGGAGTT ATTTATGAAA ATCACAACCT	5760
ATGAAATCTA TAAGTTAAAA AAATCAGGTT TGACCAATCA ACAGATTTTG AAAGTGCTAG	5820
AATACGGTGA AAATGTTGAT CAGGAGCTTT TGTGGGTGA TATTGCAGAT ATCTCAGGTT	5880
GCCGTAATCC AGCCGTTTT ATGGAACGTT ATTTTCAGAT AGACGATGCG CATTTGTGCA	5940

818

AAGAGTTTCA AAAATTTCCTA TCTTTCTCTA TTTTAGATGA CTGTTATCCT TGGGATTGA	6000
GTGAAATATA TGATGCGCCT GTACTTTTAT TTTACAAGGG AAATCTTGAC CTCCTGAAAT	6060
TCCCGAAGGT AGCGGTCGTG GGCAGTCGTG CTTGTAGCAA ACAGGGAGCT AAGTCAGTTG	6120
AAAAAGTCAT TCAAGGCTTG GAAAATGAAC TGGTTATTGT CAGTGGTCTG GCCAAGGGCA	6180
TTGACACAGC AGCTCATATG GCAGCTCTTC AGAATGGCGG AAAAACCATT GCAGTGATTG	6240
GAACAGGACT GGATGTGTTT TATCCTAAAG CCAATAAACG CTTGCAAGAC TACATCGGCA	6300
ATGACCATCT GGTTCCTAAGT GAATATGGAC CTGGTGAACA ACCTCTGAAA TTTCATTTTC	6360
CTGCCCGTAA TCGCATCATT GCTGGACTTT GTCGTGGTGT GATTGTAGCA GAGGCTAAGA	6420
TGCGTTCAGG TAGTCTCATT ACGTGTGAGC GAGCAATGGA AGAAGGACGC GATGTCTTTG	6480
CTATTCTCGG TAGCATTTTA GATGGACTAT CAGACGGTTG CCATCATTG ATTCAAGAAG	6540
GAGCAAAATT GGTCACCACT GGGCAAGATG TTCTTGCGGA ATTTGAATTT TAAAAATGAC	6600
CTAAGCTAGA ATTCTAAGAA AAAATCAATT TTAAGAGAAA ATGAACCCAA CATTTCCATA	6660
ATAAACGCA TATTAGCAAG TTTTAAACAC TTGATAATAT GCGTTTTTTC TAAGTGATT	6720
AGTAGAGTAG AGGATTTTTT TCATATAATA CTCTTCGAAA ATCTCTTCAA ACTACGTCAG	6780
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CAAAGCAGTG CTTTGAGCAA CCTGTGGCTA GCTTCCTAGT TTGCGCTTTG ATTTTCATTG	6900
AGTATAAGGG AAAGTATAGT GAATTGAAAT AAGATGTGAA CAACTCTATC AGGAAAGTCA	6960
AATTAATTTA TAGAAATATT TTAGCAGCCA AGGTGTACTG TTATAGATTG AATTACACTA	7020
TAATTTAGTG TAATTGAGAA AGGAGAAATG ATTGTGATTG ATGTTGGCTA GGTATGTTT	7080
AATGATTCCT ACCGTCTCAA ATCTTGTCAG TAAGGAAAAA TAAATTCCTC AAAAGTAGAG	7140
ATTACAAGGC TTGTTTAAGA AAGAATTCAA AGACCTTGAC AAATAAAAAAT AAAATGGTTA	7200
TTATAAAAAA TGGTCTGAAA TAGATGATGA TACTTTTCGA AAATCTCTTC AAATACGTCA	7260
GCTCAGCTTT GCCTTGCTGT GTTTTGAGCA AGCTACGGTT AGCTTCCGAG TTTGATTTTC	7320
ATTTACTAGA AATGAACTG ATGAGAGATA TCAGTAGACA TTTGAGTCAG GATATTATGG	7380
AAAATGATAA AAAGAGCTCG TGAGATTGGC ATATCAGACT ACTAAAGTAT TGAGTTTGTT	7440
AGGATTTTAG CGACTAGTTA GCTGGGAAAG GAAGATATTT GTGACAAATA ATAACTGTA	7500
TTCTGTTGATA GAATTTAGAA ATAAAATATA TGAAGAATTA GAACTTTCCA GAAGTGATTT	7560
AGCGATTTTA CTATGTGCCA TGCTTATCGC CTCTATCGGA TTAAATATGG ATTCGACTCC	7620
CGTGATTATT GGAGCCATGT TAATCTCTCC TTTGATGACA CCTATTCTGG GAGTGGGGCT	7680
CTCTCTAGCT ATATTTGATT TTAAATTGTT AAGAAAATCT TTAAAAATAT TAGCTATTCA	7740

819

AATCTTGCC AGTCTAATAG CTTCAACACT TTATTTTAT CTTTCTCCCA TTTCGTATGC 7800
 TAGTTCGGAG ATTGTTGCTA GAACCTCTCC GACTATTTGG GATGTTCTCA TTGCTTTTGT 7860
 AGGAGGGATA GCAGGTATCA TTGGTGCTAG GAAAAAGAG AC 7902

(2) INFORMATION FOR SEQ ID NO: 113:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 18627 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 113:

GAAGTTGAAA TGGCCAGCTG ATGAGCAATA TCGGTCATAG AAATCTTCTC AATCAACTTT 60
 TGC GCAATTT TTTGGTTGAT AATACGAGGA ATTTGGTGAT TTTTCTTGAC GATAGAAGTT 120
 TCAGCGACCA TCATTTTGA ACAGTGATAG CACTTGAAAC GACGCTTCT AAGTAGAATT 180
 CTAGTAGGCA TACCAGTTGT CTCAAGGTAA GGAATCTTAG ACGGTTTTTG AAAGTCATAT 240
 TTCTTCAATT GGTTCGCA CTCAGGGCAA GATGGGGCGT CGTAGTCCAG TTTGGCGATG 300
 ATTTCTTGT GTGTATCTTT ATTGATGATG TCTAAAATCT GGATATTAGG GTCTTTAATG 360
 TCTAGTAATT TTGTGATAAA ATGTAATTGT TCCATATGAA TCTTTCTAAT GAGTTGTTTG 420
 GTCGCTTTTC ATTATAGGTC ATATGGGACT TTTTTTCTAC AATAAAATAG GCTCCATAAT 480
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 CAAGGGATT TTTCTTTGTC TCTGCTCCTT TTTTGATATA ATAGTTCTAT GTTAAATCA 600
 GAAAAACAAT CACGTTATCA AATGTTAAAT GAAGAATTGT CCTTCCTATT GGAAGGCGAA 660
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 TTTCAGGAAA CTGTTATTGT TGGAGATGTG ACGACCTATC TCAACTATAT TTCTTGTGAT 900
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 CTGGATCTGG ATTCTTCAGA GATTGAGGAT TACGATGCTA TGGATCGAGA TTATTTGGAA 1020
 CAATTTGTCG CTATTTTGCT TGAAAAGACA GCATGGGACT TTACGATGTT TGAGGAAAAA 1080
 TCTTAATGTA TCAAGCACTT TATCGAAAAT ATAGAAGTCA AAATCTCTCC CAGTTAGTTG 1140
 GTCAAGAAGT TGTGGCTAAG ACTCTTAAAC AAGCGGTGGA GCAAGAGAAA ATAAGTCACG 1200

820

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GGGTAGATGA AATTCGCGAA ATTCGTGATA AATCTACCTA TGCGCCTAGC CTTGCTCGTT	1440
ATAAGGTTTA TATCATAGAT GAGGTTTACA TGCTGTCTAC AGGGGCTTTT AATGCCCTCC	1500
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CACAGGATAT TAAGGAACAT ATTCACTATA TCTTAGAAAA AGAAAATATC AGTTCTGAAC	1680
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CTCGTTTGT GACCGATCTT TTGCACTATT TAAGAGACTT GTTAATTGTT CAAACAGGGG	1980
GAGCAAATAC TCATCATAGT TCAGTCTTTG TAGAAAATTT GGCACCTCCT CAAAAAATC	2040
TGTTTGAAAT GATTGCTTA GCAACAGTGA GTTTAGCAGA TATTAAGTCT AGTTTGCAAC	2100
CCAAGATTTA TGCTGAAATG ATGACCGTCC GTTTGGCGGA AATCAAGTCC GAACCAGCTC	2160
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AGGTAATTGA AAGTCTAGGT GGGCCGGACA AGGCTCTGCT AGTTGGTTCT CAACCGGTTG	2460
CTGCCAATGA ACACCATGCT ATTCTTGCTT TTGAGTCTAA CTTCAATGCT GGTCAAACCTA	2520
TGAAACGAGA CAATCTCAAT ACCATGTTTG GTAATATCCT CAGTCAGGCG GCAGGTTTTT	2580
CACCTGAGAT TTTAGCTATT TCCATGGAGG AATGGAAAGA AGTTCGCGCA GCCTTTTCAG	2640
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TTGAATTTTT GGCTGATAAA GTGAAGGTAG AGGAAGACTA AAGAAAGATT TCATGATACA	2760
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ATTTTTTCAA TGAAGCCTGG ATGACTGGCC GCTATATTAT GGCAGCCTTT TGGGCAATTT	2880
TACTCTTTAG AAATTTCCGA GTCAGTTATG TGATGGGCAA AATCGTTGAT GTCATCGATC	2940
AGCATTTTAA TAGGAAAGAC TAGCCCTCAG CTTCCAGACA AAATCAAAGC CTTTATAGCT	3000

821

TTTTTTTGT ATACTAGAAA AGTATATTTA TAGAATTTT GCTCTATTTC TGGGAAATC	3060
AGACGTTTT CTAGTAAGTA CTGTAAAAGT TTTGAAAAAG AAAGGAACTA TCATGTCAGT	3120
ATTAGAGATC AAAGATCTTC ACGTTGAGAT TGAAGGAAAA GAAATTTTAA AAGGGTTAA	3180
CCTGACCCTG AAAACAGGAG AAATTGCCGC TATCATGGGA CCAAATGGTA CAGGTAAATC	3240
GACTCTTTCT GCCGCTATCA TGGGAAATCC AAACATATGAA GTAACATAAG GTGAAGTTTT	3300
GTTTGATGGC GTAAACATCC TTGAGTTGGA AGTGGATGAG CGTGC GCGTA TGGGACTTTT	3360
CCTTGCTATG CAATACCCAT CAGAAATCCC TGGAATTACC AATGCTGAGT TTCTTCGTGC	3420
CGCTATGAAT GCGGGTAAAG AAGATGATGA GAAGATTTCA GTTCGTGAGT TTATTACTAA	3480
GCTAGATGAA AAAATGGAAT TGCTCAACAT GAAAGAAGAA ATGGCAGAGC GTTACCTCAA	3540
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TGCAGGTTTT AATGCCAAGG TAGAAGAGTT CAATTCCCAG TCTGAGTACA AGCAAATTCC	17640
GCTACCATTC ATTGTCGTGA TTGTGGATGA GTTGGCTGAC CTCATGATGG TGGCCAGCAA	17700
GGAAGTGGA GATGCTATCA TCCGTCTTGG GCAGAAGGCG CGTGCTGCAG GTATCCACAT	17760
GATTCTTGCA ACTCAGCGTC CATCTGTTGA TGTCATCTCT GGTTTGATTA AGGCCAATGT	17820
TCCATCTCGT GTAGCATTTG CGGTTTCATC AGGAACAGAC TCCCGTACGA TTTTGGATGA	17880
AAATGGAGCA GAAAACTTC TTGGTCGAGG AGACATGCTC TTAAACCGA TTGATGAAAA	17940
TCATCCAGTT CGTCTCCAAG GCTCCTTTAT CTCGGATGAC GATGTTGAGC GCATTGTGAA	18000
CTTCATCAAG ACTCAGGCAG ATGCAGACTA CGATGAGAGT TTTGATCCAG GTGAGGTTTC	18060
TGAAAATGAA GGAGAATTTT CGGATGGAGA TGCTGGTGGT GATCCGCTTT TTGAAGAAGC	18120
TAAGCTTTTG GTTATCGAAA CACAGAAAGC CAGTGCCTCT ATGATTCAGC GTCGTTTATC	18180
AGTTGGATTT AACCGTGCGA CCCGTCTCAT GGAAGAACTG GAGATAGCAG GTGTCATCGG	18240
TCCAGCTGAA GGTACCAAAC CTCGAAAAGT GTTACAACAA TAAAAAATA GCTTCTTTCC	18300
AAGTTTGAG GGAAGCTATT TTAGTGGCTA TTGATTGCTT TTATTTTCTG AAGTTGGCGC	18360
ATTGGACTGT TTTTCGTTTT CAGTAGCAGG TTTACTTGAA GCAGGAGTAG AAGAGTCCTG	18420
AGTTGCTGTT TTCTGATCTT CTTTTTCTC TTCCTTGACG CTAGATTTTG GTGTTTCTC	18480
TTGCTGTGTT TTTTCTTGAC TAGTGTTAGT CTCTTTAGT GGAAGTGGT TTTCTTAGG	18540
GGATTCCTTT TGGATTTCTT TGACAATGGT TGCGTCTGG CTTGTCGTAG GTTCTTTTTT	18600
AATATTTTTG TTATTATCCA AGGCGTT	18627

(2) INFORMATION FOR SEQ ID NO: 114:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2560 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 114:

TAAATACGT TACCTTGCTT CTGCACGTT AGCAGGTAAG TCATTGAAAT TTAAAGATCA	60
AGATATTACA ATTGAAGAAA CGACTGAAAC AGCTTTTGAA GGAGTTGATA TTGCTCTCTT	120
TTCAGCAGGT AGTTCTACAT CAGCTAAGTA TGCACCATAC GCAGTAAAAG CTGGCGTGGT	180
AGTAGTAGAT AATACATCTT ATTTCCGTCA AAATCCAGAT GTTCCTTTGG TTGTTCCAGA	240
GGTCAATGCT CATGCACTTG ATGCTCACAA CGGAATCATT GCCTGCCCTA ATTGTTCAAC	300
AATTCAAATG ATGGTGGCTC TTGAGCCGGT TCGCCAAAAA TGGGGCTTGG ACCGTATCAT	360
TGTTTCAACT TATCAAGCCG TTTCAGGTGC TGGTATGGGA GCAATTCCTG AGACACAACG	420
TGAACTTCGT GAAGTCTTGA ATGATGGTGT GAAACCACGT GATTTGCATG CGGAAATCTT	480
GCCTTCAGGT GGTGACAAGA AACATTATCC TATCGCCTTT AACGCTCTTC CACAAATTGA	540
TGTTTTCAC TATAATGATT ACACGTACGA AGAGATGAAG ATGACCAAGG AACTAAGAA	600
AATTATGGAA GATGATAGCA TTGCAGTATC TGCAACATGT GTGCGTATTC CAGTCTTGTC	660
AGCTCACTCT GAGTCTGTTT ATATCGAAAC AAAAGAAGTG GCTCCAATCG AAGAAGTAAA	720
AGCAGCTATC GCAGCCTTCC CAGGTGCTGT TCTGAAGAT GATGTAGCTC ATCAAATCTA	780
TCCTCAAGCT ATCAATGCAG TTGGTTCGCG TGATACCTTT GTTGGTCGTA TCCGTAAAGA	840
CTTGGATGCA GAAAAAGGAA TTCACATGTG GGTGTTTCA GATAACCTTC TCAAAGGTGC	900
TGCTTGGAAC TCAGTTCAGA TTGCTGAAAC TCTTCATGAA CGTGGATTGG TTCGTCCAAC	960
AGCCGAATTG AAATTGGAAT TAAATAGTC ATATCGTTTA GGAGTTCAGA TGAATCCTT	1020
CTTTGAAATA GAGAGGTGTT TTCGTGTCTT ATCAAGATTT AAAAAATGT AAAATCATT	1080
CAGCCTTTAT TACCCCTTTC CATGAGGATG GTTCCATTAA CTTTGATGCT ATTCCAGCCT	1140
TGATTGAGCA TTTATTGGCC CATCATACGG ATGGAATTCT TCTCGCAGGA ACGACTGCTG	1200
AGAGTCCAAC TTTGACCCAC GATGAGGAGT TGGAGTTGTT TCGGCTGTGA CAAAGGTTG	1260
TCAAATGGACG CGTTCCTTTG ATTGCGGGTG TAGGTACTAA TGATACGCGT GACTCTATTG	1320
AGTTTGTCAA AGAAGTAGCG GAATTGGTG GTTTCGCAGC TGGGCTTGCT ATTGTTCTTT	1380
ACTACAACAA ACCTTCTCAA GAAGGGATGT ATCAGCACTT TAAGACTATT GCAGATGCTT	1440
CTGACCTACC AATTATTATC TATAACATTC CAGGGCGTGT AGTTGTGAA TTGACTCCAG	1500
AAACCATGCT TCGCTTGGCT GACCATCCAA ATATTATCGG TGTCAAAGAA TGTACTAGCT	1560
TGGCTAATAT GGCTTACTTG ATTGAGCACA AGCCTGAAGA GTTCTTGATT TATACAGGTG	1620
AGGATGGAGA TGCTTTCCAT GCCATGAACC TTGGGGCGGA TGGGGTTATT TCTGTTGCCT	1680

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CTCATACAAA TGGGGATGAA ATGCACGAGA TGTTTACTGC GATTGCAGAA AGCGATATGA	1740
AGAAAGCCCG AGCAATTCAG CGTAAATCA TTCCTAAGGT TAATGCTCTC TTCTCTTATC	1800
CAAGTCCTGC TCCAGTTAAG GCAATTCTTA ACTATATGGG ATTTGAAGCT GGACCCACTC	1860
GTCTACCTCT TGTTCAGCA CCAGAAGAAG ATGCCAAACG CATTATCAAG GTTGTCTAG	1920
ATGGCGACTA CGAAGCAACT AAGGCAACTG TAACAGGGGT CTTAAGACCA GATTACTAAT	1980
AAAGACAATA AAATCCGGCT CTTGTCAAC TGAGTGGGT TGAAGTCAGC TAAGCTCGAG	2040
AAAGGACAAA TTTTGTCTT TCTTTTTTGA TATTCAGAGC GATAAAAATC CGTTTTTTGA	2100
AGTTTTCAAA GTTCCGAAAA CCAAAGGCAT TCGCCTTGAT AAGTTTGATG AGATTATTGG	2160
TCGCTTCCAA TTTGGCGTTT GAATAGGGTA GTTGAAGGGT GTTGACGATT TTCTTTTGT	2220
CCTTTAGAAA GGTTTTAAAG ACAGTCTGAA AAATAGGATG AACCTGCTTC AGATTGTCTT	2280
CAATGAGTCC GAAAAATTC TCCGGTTCCT TATTCTGAAA GTGAAACAGC AAGAGTTGAT	2340
AGAGCTGATA GTGATGTTT AAGTTTTGTG AATAGCTCAA AAGCTTGTTT AAAATCTCTT	2400
TATTGGTTAA GTGCATACGA AAAGTAGGAC GATAAAATCG CTTATCACTC AGTTTACGGC	2460
TATCTGTTG AATGAGTTT CAGTAGCGCT TGATAGCCTT GTATTCGGGA TTTTCGATGA	2520
AACTGATTCA TGATTGGAC ACGCACACGA CTCATAGCAC	2560

(2) INFORMATION FOR SEQ ID NO: 115:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 11303 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 115:

TATTGGATTT CCCTTGCAAT CAGTTTATGG GACAAGCACC CGGCAGCGCA GAGGAAATCA	60
ACGCCTTCTG TAGCCTACAT TTCAAACCA CCTTCCCACG TTTTGCCAAG ATTAAGGTCA	120
ACGGTAAGGA AGCAGACCCT CTCTATGTCT GGTACAAGA CCAGAAATCC GGCCCACTAG	180
GAAACGAGT CGAATGGAAT TTCGCTAAGT TTCTCATCGG TCGAGATGGG CAAGTCTTTG	240
AACGCTTTTC TTCAAAAACA GACCCAAAAC AAATTGAAGA GGCGATACAA ACTCTACTAT	300
AATTCACAAT CTCACTATGA TTAGGTTTCC TTAACTTGA TGAATAGTGA GATTTTTTGA	360
TGGGCTTTGA CTTAAATAGA AAAACACCCC ATGATATGAA ACATGAAGTG TTGTAAAGTC	420
TATGTTGTAG GTGCTTATTT CACAATTTC AATGTGACCAG TGATAACGAA TACCATACAG	480

832

AATCTTCATA TACACTAAAC AAATGACTTT CTAATTATTT CAATTAGTTT TGGCTAGTAA	540
ATATCATTTT CAACAAACGC CCTCTCAATT CCTTATCCTG ATGATGCAAG ATATTCATTA	600
AGTCATGAGA GTTTTTTCGCA TTGATGAATT GATTTAACAA TCTATCTTTT AATTCATATG	660
GAAGAGAAGC TGTCTTTAGT AGTCTAAAAA CTTCTGTCATT TAAAGATGTC CTTTATTAT	720
CTTTCCATTC AAATTTAGCT GTATCATTTT TATTTGGCAA TTCAATTATA GACACATTCG	780
TTCTTTTAAA ATGAATTCTA TGTTTTCTAT TGCTTGAAC GATACTAGAA TCTCCTTGTA	840
ATGCTAACTC TACCATTCCC ATTTCCCAAT CGATTGATAA TCTTGTTTTA TATCTTTGAC	900
CATTTTGATC TTCAAGCATT TCAAAAGAAT GTTGTTTTCC TGGGAATACA TACCAATCTA	960
CAACTTCAGG TAAATCAACA CCCATACCTA TCTCAGAACC AACCAAGGGA ATGATTGCAC	1020
CACTTTTTGC AAACACAGGC GTAGTCGAGA TGTCCTTATA AACACTTAAC TTCACACCAC	1080
CTGTGTATTT TTTCTCTGAA AAGAAGTCAT ACCATTCACC TTCAGGGAAC CATACATCTA	1140
CTTTTGACAG TTGGAATGTC AAATCCATCT TTTCTACAAT GGGAGCCACC ATCAGTTCTG	1200
TTCCAAAAA GTATTGGTTT GGAACATTAT AGCTCTCATC ATTCTCTGGA TAGAAATAAT	1260
AGATTGGACT GATTAATGGG GCACCTTCCT CATGTGTCTG TACATTCATG GTATATAGAT	1320
AGGGAATCAT CTGATGTCTC AAACGAAGGT ATTTCTTCAT AATCTTAGAT GTTGTCTCTG	1380
AAAAAAACCA AGGTTCTTTA CTATTAAAAG GACTTCTAGA ACTATGTAAT CGAGTAATCG	1440
GACTAAAAAC ACCAACTGT AGCCATCTAG TTTGTAGCTC TTCGTCATAA TCCCCCAACA	1500
TATGTCCACC GATATCATGA CTCCACCAAC TATAACCGAT ATTAGATGCT GTCGCTGTAA	1560
AATAGGGTTG AAATCTTAAG GAATTCCAAC TAATAATAGT ATCCCCTGAA AAACCAACAG	1620
GGTAGCGGTG ACTACCAGGA CCTGCATATC TTGATAAAAT CAAACCACCT TCTGCATTTT	1680
TACAACTATC CTGATAGTGA TAATGGTTTA AAAGCCAAAG TGGATCTAGC ATACCTTGTG	1740
TCCCTTGTTG CCAGTCAATC CACCAAAAAT CTAATCCCTG CTTTCTAGT TCATAATGAA	1800
CATCTTTAAA GTAGGCTTCC CTAAGAGAGG GATTAAAAAA ATCAAAAATA GCAGGTTCTT	1860
CTAGTTCTAC ATTTAACCCC AACCGTTTGG CGATTGAGG ATAAGCTTCT TCATAAGCCC	1920
GTATCCCATC AGCAGGATGG ACATTTAAGG AGAGTTTGTG CTTTCTATCA TGAAGTTGTT	1980
GCAATAACTG TTCTGGATTT GGTATTAAGT TTCTATTCCA ACTATATCCT GTCCAGCCAC	2040
TTCCAAAGCG AGCTGGAATG TCAGTTATAT GCCAATCCAT ATCTAACACA CCGATAGATA	2100
ATGGAATTTT CTCTGTTTCA AATCTGTCTA TTAAATCCAA GTATTCATCC GACGTATAAG	2160
GCCAATATCT ACTCCACCAA TTGCCTAAAG CATATCTTGG CAACAAGGGT GTTGAACCAG	2220
TCAAATGGTA AAAATCTCTG ATTGCTCCTC TATAATCATG CCCATAGGCA AAGAAATACA	2280

833

GGTCAATTG	ATTTTCTCTC	TCAATATAAC	CAGATTGTTT	ATCCCAAATA	AATCCTTGAG	2340
AATCATCCAA	TAAGGCTATA	CCATTTTCGGC	TAATAATTCC	ATCTTCTAAC	GAGATTGCTC	2400
CATCTGCCTT	ATCCAGAGTC	CGAGCTGTTT	CTTTTAACGT	TTCAATAGAT	TCACCAAAAT	2460
ACCAGCGACT	ACCATATACG	GCAAAATTTC	CTTTTAATTC	TATAAATAAA	TTTTCGGCGT	2520
TAAATTCTCC	TTTATTAAAG	TGCAGATGAA	AATAGTCCGT	CATAATATCT	AGTACGTTTG	2580
ATGTCTCGAT	ATAATCTAAC	GAAATTGGC	CAAAATCTCT	ATTATAGATA	AGTTGTGTCG	2640
TTCTATCCTC	AAAACTTCCA	GTTTGAGAGT	ATTCTAACCT	TACTAGCTTG	TCTGTTAATA	2700
CAGAGATTTC	ATAAACTCT	CCCTTAAAAA	TTTTCAATTT	GTTTTCCTCC	TTTATGGTA	2760
GCATAAAAC	AGAACGCACC	ATTTTGTGATG	CGTTTTTCAT	TATTCTGAAT	GCAATGTTCT	2820
ATCTGTTATA	TCTATGACAA	ATAATAGTCA	ATTGAAAAAA	TGCAGTGGAC	AAAATATCTT	2880
TTAACAAACC	AAGAGTTTAT	TAAAGAGTTA	TCACTTTTC	ACTTTTCTAA	GCTTATGCAG	2940
TTGTGAAACA	AACTACTTTT	AAACTATTAA	CTAAGATAGG	ATTGATAAAT	AATTTCAAAC	3000
TCTTACTAGC	AATCATACGA	TATTCAAGCT	CACGTGCTTT	TTTCCTTCCT	GCTTATTTCT	3060
TAGAACTGAA	GAACCCGGAT	CGGTATATAA	ATTATCCGGA	TCAACATAGT	CATAAGATTC	3120
ATAACAGTTG	CGCTTCATTA	AGTCATCCCC	AGAGCAAGAG	CTTCATCTCG	TAATTTTTC	3180
ACATCACTAA	CGTAGGTGCG	CCATCCTTCA	ATCATATTTG	TACTTAAAGC	ATACCAAACA	3240
CTCTTAAAAA	CGGATCGGTT	TTCAAAAGCT	ATTCCCATGA	TTGTCATCTT	TTCTTTATCT	3300
ATATCTAAGG	ACATATGCTA	CCTCCTTTAG	ATACATTATA	CCATGTTTCT	CTGTAGCTTT	3360
TAAAAATTTT	ATTTTGTGTTG	TCATATCTAA	GTTTTTCAGCA	CGCTTATCCT	ATTTTATAAG	3420
CCTCAAACCC	AAATATAAAA	CGCATTCCTT	TTGCTTTTTT	ACTATTGTAT	CGTATTCTAC	3480
GATAACATAC	TTTACTTTAT	TGTTTTTTTA	AATAACAGCA	GTTCCCTGTT	TATCAACTAT	3540
TCGAACACT	TTCTATTTTG	CTTCATACCC	TACATAGCGA	AAAAATATGA	AAAAGCAGAG	3600
AAGAATATCT	TAAAAAGACC	TCTTCACTGC	TAATATTAAC	ACTCATTATT	TAAACTATAT	3660
GGATTCTATC	ATCGAGTATA	CTTTTTTACT	TATTAGATAC	CTTGCTCTTC	TTTCACCAAT	3720
TTTTGATCAT	ATACACGGAT	GAATGGAAGA	TAGACTAGGA	ATGCTGCAAA	TGCACATACT	3780
AGAGCAACTA	ATACAGCTCG	AAGATCTGCT	GTCCCTAAGA	AAGCTCCAAT	CCCTACTGGA	3840
GTTGGCCATG	GAACCTGTGC	GATAATTGGC	TTAATAAAGT	TTAGAGAATT	CGCTACGTAA	3900
TAAATAGTAG	CAGTAACCAT	TGGTGCTAAA	ATAAATGGTA	TAGCCAAGGC	TGGATTATAG	3960
ATAATAGGTA	ATCCAAAAAT	TAATGGTTCA	TTAATATTAA	ATAAGGCTGG	AACTACAGAT	4020

834

GCTCGTCTTA TTGCTTTAAG CTGTTTCAGAT TTAGAGGCAA AAGCAATATA TAAACATAGT	4080
CCTAAAGTTG CACCAGAACC ACCTGCAATT ACAACATAT TAGAAAATTC ACCTGCAACA	4140
GCGAAGTGCC CGCCAGCAGC ATTTTCAGCC ATGTTAGCAA GAGCAATTGG ACTAACAAAT	4200
GCAAAAACAA TGTTCGCACC GTGGATACCT ACAATCCAAA GTAGTTGAGT CAATAGATAA	4260
ATAATCATT AACC AATCCA CGAATTAGTC AGATTGGATA CAAAACCAA TGGAATTGCA	4320
ATGACTTTAA AAATATCTGT TCCCATTGCT ACAAGAAGAC CGTTGATAAA GATAACAACA	4380
AATGCAACAA CAAATCCCGG AACCAAAGCG GTAAATCCAC GAGAACTCC TTCTGGAACA	4440
GCTTCAGGCA TTTTAATAAC CCAATTATGT TTAACACACA TACGATAAAT AAGAACAGTC	4500
ACAATTGCCA TAATGATTGC GGTAAAAATC CCTGTTGTCC CAAAACGTGC GACTACATTT	4560
CCCATTGCCC ATCCATCTGC AATTACTGCA CCTTCTTTTA GACTTGTCAC AGTCTTCATC	4620
ATTCCACCAT CAAAATGAT TTGCGGTACT GTCATGACAA AAGCCATCAA GGCAAGCAAG	4680
GCACCATTA GAGGATTCAT ATTGAGTTCT TCTTCCTCTG CATAAATTTT TGTCAATTCA	4740
TATGCAAGTG ATAGAACGAA ATAAAGAGAT AGAGAACCA TAGTCGCATA GTTTGCAACC	4800
ATGTAAAGTG ATGTGAATTT ATCAAATGAA GCAGAGAAAA TATCTGCCAC AATTGGCCAA	4860
AATGAGAAAG CTTGTGGCAA AATACTGAAT ACCAAAAACA TTGATCCTAC AATAGTAAAT	4920
GGTACAGCAG CCATACCTGC AGCCGTGATA GCACGTACTA CTTTAACTG AGCAAGTTTG	4980
CCCATTGGTC CCATAACATG GTTTTCAAGA AAACCAAACA ACCCGTTTG TTGATCCATA	5040
AATAGACCTC CTTAATAAAA CATAATAATT TTTACTTTCT AAAGACTAGT TTCAAATACA	5100
AATTATACTA GATCAGGATT ATAACTAAG TGAGTTCTTT TCCAATTGGA CAAATGTTG	5160
ATAAGCCTTA TCTGTTCTGT TATAAATTTT TTTAATTTCT CTAATGTCTA ACAAATCAG	5220
AACTAAACCT AATAGAAGAA CTACAAAAAC AAATAAACGT GCTACTTGGT TATTTTCAAA	5280
AATCGGAAAA AGATTCTTAA ACCAACTTGT CCAAGTTAAA ACAAGTAATC CTATTGAAAT	5340
AAGCATTTGT ATTCTAACAA ACATTAGTGT TATTTCCAAC TTTTCTTTCC TATTTCCATA	5400
AAGTTTAAAT TGTTCACAG TTGCTAAAAT AGAAAATACT ATGAGCATAA TGGGGAAAAT	5460
AATAATAGGC GAGGGACTAA TAACTGACT CAAAGCCAA TAAATATTCC CAAAAAGAA	5520
GAGTGCTATT GAATAACGTA GAAGAAGATA TCGATTGAAA AAAGTATTAG TTAGAGCCAT	5580
CTCTCGACGT TGTGTTCAA TCTTTTGTCT TCTTTTTTA TCCATATCAT TTCCTCCTTA	5640
TATAACAACA CATATTTAGT TAACTTTCTT ATAAAGAGCT AACATTCCT TTGCTACTTC	5700
TAATAATGTC ATAGTGGTCA TTAAATGATC TTGAGCATGT ACCATGATAA TTTCAATTTT	5760
AATTTCCACT CCACTTGCCT ATTCTTGCAA GAGTTTGGTT TGTGCATGAT GCGCTTCAAG	5820

835

AATTATCTCA TTTGATTGAT TTAATTTACT TTCTGCATCA TCAAACTAC CTTCTCTCAT	5880
TTTTGCAAAT GCTTCATGTA TTTCTGACCT TGCATTTCCC GAATGCAGGA TAATTTCAAA	5940
TGCTGCAACC TGCAGTTCCT CTTGATTCAT ATAAACCTCC TATTTTATCT TCTCAAATAT	6000
GTTAATAAAA TCTTCAAAGT TATTGCAAGA TATTAGCTGA TTTTGCAATT CATCATTTCTC	6060
TGTCAGAGAG ACTATCTTTT TAGTCACAGT TGCCAAACCT TCGTTCCCAT ATATTGATGG	6120
AGATAGAAGA AATACTAGCT GGACATGTGA ACTTTGATTA TCCCAGAGTA ACGAATCTTT	6180
ACAAATTGCA ACCGAAACCT TTCCCTCTGT ACCAAAGGGC TGAATAGGAT GCGGAACTGC	6240
AATTTTTTCA GAAAAACAA CTGAACTTAA TTCTTCGCGC TGTTTAATTC CATAAAGTAA	6300
AGATTGTTCA AACTCATTTG ATTCACCAAC AGATAAACTC TCAACCATCT TTCAAGTAA	6360
ATTTACCTTG TCTGATTCAG TACATATTAA AAAGTTTCTT TTAATAAAAT ACTGTCTAAA	6420
GCCGTTGTTT TCAAATTTGT TAATCTTTGA TGATTGTACA TAACTAGAAA CTTGCATCTA	6480
ATCCATAGCT TTTCTAATCA TTTCCATCTC ATCACTCTTA AGAAACACAC TAACTTTAAA	6540
AACTGGGATT TGAAATATA GATTTGATAA ATCAATAGCT GACACTATAA AATCTATTCC	6600
TTTAAGTTTT TCTTGATTCA ATTCATAGTA GCCTATTACA TCAACAACCT CTACTCGCTT	6660
CCCAAACCTC GTTTCCAAAC GATTCTTAA CATTTGGGCT GCACCAAATC CTGTTGCACA	6720
AATAGCAAGA ATATTAACT TAGTACTCTC TTTGCTACGT TCCATAGCAG CTAAAAAGTG	6780
AAGACTTACA TATGCTACTT CATCATCTGA TATTGTCCAC TCCAAGAACT TGTCCATATT	6840
TGCAAGAATT TCTCTAGTCA TAAAGAATAT ATCACTATAA TTCTGTTTAA TTTCATCTAC	6900
CAAAGGGTTA TTTAAGGTAA TCCGGCTTTC TAAACGTACT TGTAGTGTCA TTAGATGAGT	6960
TATCAATCCT TCAATTAGTT GGAAATCTGA AGAAAAGTTA TACATATCAT CTAATCCTAA	7020
ATTCTGAAAT GTTTTAAATA AAGATTTTTT TAAAACCTCT TCAGAAATAT TCTTCTGATT	7080
TTTTTGACAT TGTGACTCT TAGCTAACAA ATGCAAAGTA ATGTAGTCTA TTTCTGAAC	7140
TGGAATTC TGAATTGTTA CTTCTCTTAC TTTAGAAAGA ATTCTTTGGG CAACCTTTCT	7200
CTCTATTGCA TCATCAGTCA TCTGACAGTC TATATTTTTT ATTTCAAATC CGGATTTTAA	7260
ACGAATCACA GACAATGCTA TGTGAACTAC TAAATCTGT AGTACAAAAT CAGATAGTTT	7320
TAGGTTGGCC TCTTGGCATT CATCCAAAAC AATTCTAGCA AATTCTTCTA ATGGAACAGT	7380
TTGATCAAAA AAGTTAAATT TTACATAGCA ATGTATTGTT TTAATAAATT GATTCTCTAG	7440
GAAATAATTT ATGATAAAAC GTCGTTTATC ACGTTCCTCG CCTGAGACAT AAACCTCTTT	7500
ATTCGCCCTA CTCTCAATGG ACAAATTATA CTCTGATAAC ATCACTCGTA TCTTTCTGAA	7560

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ATCATGAGAT AATGTTGAAC GACTAACGTA AAGTTCATCA GCTAAATCAT CAAAAAGAAC	7620
TGGAACCTGC TCAAATAATA ATTTATTTAA GATAAATACT AAACGATCAT CACCTTTTGA	7680
AACCGCAGTT TTCGTATAGT CTTCTTCCAG TTCATAAGTT TGTCTAAACT CCTGGTAAGC	7740
GCCTTGATTC TCAAAAAATA TTTGATACCC TTGACCTTGT TTTGAAATCA ACCGGACTCC	7800
TTGAATAATC ATTGTCTTCT CAATTAATTT CAGTACATTA CGGACAGTTC TATCTGAACA	7860
GGATAAATAT TCTGCCAGTT CTTTGCTTGT AACAAAACGT TCCTTATTTT TTATTAATAA	7920
TTGAAGGATA TCTTCTCTTT TAATGTTTAA CACATTCATT CCCTCCTAAA ACGTATGTTT	7980
TCATATATTG AAGCATATTA TACACTTAAA TCAGTTTATA TCAAACCTCAA AACAATTTAT	8040
CTTAACCTAA ATATTTATTG ACATTTTCATG TGTTCATCAA ATATTCTCAA GAATCAAATT	8100
AGCCATTTTT TCAATTCCCA TTGGAATAGG AATATAGGCT TGAGGAGGTA TTTGTACAAC	8160
TGGTMTTCCT GCTTTAGAAC CAGCCTCTTC AAATGCTTA AAGTACATTT TTGTTTGAGG	8220
ACTGACAAGA TACAAATCAA AAGCTGCTGC TGCGATAGCT TTCCCTCCTT CAGTAGCACT	8280
AATAGCATCA ACTACAATAT CTTTCCCTTT TCCTTTTAGA AACTCTGTTG TTTTCTGTGC	8340
CATAAGTGAT GAAGACATTC CTGCTGCACA AATAATTAAA GCTTTTGCCA TAATATTTTC	8400
TCCTTTTCTT AAATCCAATC AAAGCTGTGC TAAGTTGGCT TATTTGTTAT CTATTTTAT	8460
TATAAAATAA AGCGTTTCCA ATGACAATTC CCTCATTTTC CTAAATGATA TGGAAAAAAA	8520
TTATTTATAC TTCAATTTAT AAAATAAAAT TATTCCTGAG AGTAGAAATG AAACACTATT	8580
TGCTAAATC AAAGGCAAGT CTCCTATACG AATACCATGA GCAAGCCACA ATGCAATACC	8640
AATAACTTGC ATAACATACA TACCTAGAGC AATAGATCCT GTGTCCTTTG TCTTAACTAC	8700
ACGAAAACT TGTGGTAAAA ATGCAAATGT TGTAAAAATT GCTGCAATAC TTCCAATCAT	8760
ATGTCACCTC AATATGCTAA ACAAACCTGAG AATAATCTCA GTTTGTTTAT ACTATTCTAC	8820
TGATTCACCG TTAGATGAAA TAACTTCCTT ATACCAGCCA AAAGATTTTT TCGGGGAACG	8880
ATTATAACTT CCCTTCCCAT TATCATCTTT ATCTACATAA ATAAAGCCAT AACGTTTCCG	8940
CATTCACCG GTACCAGCTG AAACCAAATC AATACATCCC CATGGAGTAT AACCCATTAA	9000
ATCAACACCA TCTTCAACTA CAGCCTTTTT CATTTACGA ATATGGGCAC CTAGATATTC	9060
AATTCTATAA TCATCATGTA CCATACCATC TGCTGCAACT TGATCTATAG CTCCAAAACC	9120
ATTTTCAACA ATAAAGAGTG GTAAGTGATA GTGGTCTGTA AACCAATTTA ACGCATAACG	9180
CAAACCTTCT GGATCAATTT GCCACTCCCA TTCAGAAGCC TTAACATAAT TATTTTTCAC	9240
TAAATCTTCT GTTTCAAGAT AATCAAAATA AGGATTATTT TCACGATGAG AGTCGATAGC	9300
AAAGGACATA TAGTAACTGA AACCAATGTA ATCTACAGTC CCACCAAGTA AATCTTCTTT	9360

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ATCCTGGGCA GTAAATCAA CTGAAATACC TTTTCGTTCC CAATACTTGA AAATATGCTC	9420
AGGATATTTA CCTAAACAT GCACATCAGC AAAATAATAA CGCTTCTGCA TAGCTTTCAT	9480
TGCCATTAAG ATATCCTTAG GATTGCAAGT AACTGGATAA ATTGGACACA TCGCAATCAT	9540
ACAACCTATT TGAAATCTG GATTAATCTC ATGACCAATT TTTACAGCTC GTGCAGAAGC	9600
AACTAATTCG TAATGTGCTG CTTGATACAT AATTGCTTCT CTATTATCAC CTTCTCATA	9660
TACAATACCT GAGTTAGTAA ATGGTGCAAA ATCTTCCTGA TAATTCGCTT GATTATGAT	9720
TTCAATGAAA GTCATCCAAT ATTTAACCTT ATCTTTGTAA CGTTTAAATA CGACTTCTGC	9780
AAAACGAGCA AAGAAATCAA TCAATTCCT ATTTTCCAA CCACCATATT CGGTCACTAA	9840
GTGATAAGGC ATTTCAAAAT GAGTAGAGT GATGACAGGT TCAATACCAT TCTTTAAGCA	9900
TTCAATCAAAA AGATTATCAT AAAACTGTAA TCCTTCTTCA TTCGGCTCTA ACTCATCACC	9960
TTTTGGAAAG ATACGTGTCC ATGCAATAGA GGTACGGAAG CACTTGAATC CCATTTCAGC	10020
AAAAAGTGCT ATATCTTCTT TATAACGGTG ATAAAAATCT ATCGCCTCAT GATTGGATA	10080
ATATTTACCC TCTAAACTC CCAAAGTAAT TTCACGAGCT ACTCCATGAC GACCAGCAGT	10140
CATAACATCA GCAACACTAA TTCCCTTGCC ACCTTCTTGC CATCCACCTT CAAGTTGATG	10200
AGCAGCAACA GCACCACCCC ATAAAAATCC ATCTTTAAAA GTAGTCATCT TTTTTCCTCC	10260
TGACTTTGAT ACTCTTATTA TAAACCTTAA ACCAAAAGAT GAAAACGCAT TCTTTTTCCT	10320
TATTGTTAAG GAAAGAAGTA ATTTTAAATG GAAATAGAAC AATATCTTCT TGTATTCTCG	10380
TAATGATATC TTTACGATTT TCAATACTTT CAAACTACAA AACTCTCAC AATAATTCTA	10440
ATTCCTGTG TCTATAAACG ACTTATCGCT TTCTGGCATC CCAGAATCAT CTTCTATATA	10500
ACGTTCAACT TGCATCTGCA AGTGATATTT TTTTCTTAAA TCTAAGATTT TCTGCATTGT	10560
CTTTGATTGA TAATGTTTAT CTAAAGTTTC TTGATTTATC CACTGATCAA TAAGGAGAAT	10620
AGTTCCCTCT TTTTCAATTG GTAAAAATA TTCGTATTTT AAGTTACCTT TTTGATTTCT	10680
AATTTCTTTA ACAAGGCCAC TATCAAGCAT TTCTCTTGCA AACTTTATTG CACTATCTCC	10740
ATCACCTTTA TAATATACAT GAATAGTCAA TGTCATCTTA TATCCTCCAA AATCATCCTT	10800
CAATTTTAAA AAAACAAGTT TAGATGAGGA TCTAAACTTG TTTTATGA ACTAATTATC	10860
TAACGTTTCG CCATTACTTT CAATCACTTC TTTATACCAA TAAAATGATT TTTTCTTATA	10920
GCGATTTATA GTCAATTGAA ACAAGAGCAG GACAAAAGAG CCTCATAAAA GGTATTGCAA	10980
CTTGGAATA CCTTTTGTAG GTGCTTTTGT ATATGAGCCC ATGTTTCTC AATAGGATTG	11040
TACTCAGGTG AGTAGGGAGG AAGAGGTAAA AGTTTATACC CAACTCTTC ACACAAGAGT	11100

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TCTAGCTTCC CCATTCTATG GAATCTTGCA TTATCCATAA TAATAACCGA TGGTGTGGTT	11160
AATGTTGGTA AGAGAAACTT CTGAAACCAA GCTTCAAAAA AGTCGCTCGT CATCGTCTCT	11220
TCGTAAGTCA TTGGAGCGAT TAACTCACCA TTTGTTAGAC CTGCAACCAA AGAAATCCTC	11280
TGATATCTTC TTCCAGATAC TTT	11303

(2) INFORMATION FOR SEQ ID NO: 116:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3112 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 116:

CCTTAGATTT CCACTTGCCA GAGGAATTGA TTGCCCAAAC GCCCCTTGAA AAACGTGATG	60
CCTCCAAACT CCTCATCGTC AACCGTGAGA CAGGAGAAAT GCAAGATAAA CATTTCCACT	120
CTATTATTGA TATGCTGGAA CTTGGTGATG CCCTTGTCAT GAACGACACC CGAGTTCTCC	180
CTGCCCGCCT CTATGGTCAA AAAGTGGAGA CAGGAGGTCA TGTGGAACCT CTCCTCCTTA	240
AGAACACTAG TGGAGACGAG TGGGAAGTTC TGGCTAAACC TGCCAAACGC CTCAAGGTCG	300
GTACTCGTAT CAGCTTTGGT GATGGCCGCC TCAGCGCTGT CGTTACAGAA GAATTGACCC	360
ACGGGGGACG CATGTGCCG TTTGAATACC AAGGAATTTT CCTAGAAGTC TTGGAAAGTC	420
TGGGAGAAAT GCCTCTGCCA CCTTATATCC ACGAAAAATT AGATGACCGT GAACGTATC	480
AAACCGTCTA CGCCAAGGAA AGTGGCTCTG CTGCAGCACC GACTGCTGGT CTTCACTTCA	540
CCAAAGAACT GCTGGCAGAA ATCCAAGCTA AGGGTGTTC TCTAGTCTAT CTGACTCTCC	600
ATGTCGGA CT CGGAACCTTT AGACCTGTTT CTGTGGATAA TCTGGACGAA CACGAAATGC	660
ACTCAGAGTT CTATCAACTT TCTGAGGAAG CTGCTGCCAC CCTTCGCTCT GTCAAAAAAA	720
ATGGTGGTCG TGTATCGCT GTCGGAACCA CTCTATCCG CACCTTGAA ACTATTGGTT	780
CCAAGTTTGA TGGGCAAATC CAAGCAGATT CTGGTTGGAC CAATATCTTT ATCAAACCTG	840
GGTATGAGTG GAAGGTCGTG GATGCCTTCT CAACCAACTT CCACCTGCCA AAATCAACTC	900
TGGTCATGTT GGTTCCTGCC TTTGCAGGCC GTGAATTAGT CTTAGATGCC TACCACCATT	960
CCATCCAAGA AACTACCGC TTCTTCAGTT TTGGTGACGC CATGTTTATT TATTGAGAAA	1020
GAATTTCTCT AAATCTTCTA ATACCAATAA ATCGCTAAGA TATTATTTCA AAGAACATCT	1080
ACAATTGAAA CTCTAGCTAG CTGTAGAAGA GGCCTAGTAC ATTGAAATTA AAATGCTTCC	1140
CCCTAGCTTC GAAAATATTG CCATAGATTG CGTTGACTCT CCAAATTGAT TCATCTATAT	1200

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TTTATTTTCAG CTTCTTATAC TTTCTTCGCT GTTTGTAAAT CAAAATGCAA GACACATGAG	1260
TAGCACCATA TTTGTTACTC TTATCTGTCC TCTCAAGAGA CTATTATGAG TTATTTTCAGA	1320
ATCATTCACCT ACTTTGACCC TGACTCTCCT TAGTCTCAAA ATCAAAGACT TATACTCTTC	1380
AAAAATCTCT TCAAACCGCG TCAACGTCAC CTTGGATTAT ATATGTGatC TgaCTTCGTC	1440
AGTTCTATCT ACAACCTCAA AGCAGTACTT TGAGCAACCT GCGACTAGTT TTCTAGTTTG	1500
CTCTTTGATT TTCATTGAGT ATTAAACAAA AAGTGAACAA ATCTGAATTC TAATGTACAG	1560
AAGACTAGGC TTGTTCACTT TTTTATAGTC GCTATAAGAT GACCTTATCT ATAGCTTTTT	1620
ATATATAATT ATATATTCAG ACATACTATT ATCAATTTTG TCGCAGGGAG GAATCTGTTA	1680
ACGCACCCAT TCACCATTAT CATTGACTCT ATAGCCATCT ATACTTGTAT TGACCGCTAA	1740
CTCACCCGAT GTATTTACAT AATACCATT ACCACCAACT TGGAACCATT GATTGACTTT	1800
CATAGAACCG TTGCTGTTGA GGTAGTACCA TGAACATTA ACTTGTACCC AACCTGTTGC	1860
CATGGAACCA TCAGTATTAT AAAAATACCA CATACCATT TCTTGTTCCT AGTCTGTTGT	1920
TGGAGCAACT GCTTTAGCTG GTTCTACTGC TACATCTGTT CCTTGGTTAG ATGTAACAGA	1980
TACAGGATAC GAAGGAATAG ATGATTGCTC AGGAACAACA ACTTTTTCAG GTTCTCTCGT	2040
CCCTCTCCTT ATACGTCTTT TTACCATCTC TTTAGTAATT TGACGAGAAG TAGTTTCTTC	2100
AATTGTTCCA TCACGTTTAT CTACAGTATA GATTGTAGTA AGAGTAATTT ACCAATTTCT	2160
CCTACTTCTT CTACTTCTTG ACTTTTATCA AGAGTTGGGC CATCGAGATA TTCTGTTTCG	2220
ATTGGAATTT CTTGGACAAG AACTTTGGGC TGGTTCTTT TTTTAACAAC TCTTGTGTTGA	2280
GAGTCTTTTT TTTGACTTAA AGTACTCTCA GTTACTTGTC CACTCTTTC ATCTACATTA	2340
TAAGTTATCG TTGTAAGTGT TTTCCCATTC TTTCTAGAG TAATCTCTTG CTCCTGTCCT	2400
GCAGAAAGGT CATTGTCTGC TTCATATTTA GTAGCAAATG GAACAAGAAC TTCTTCAACC	2460
TTGCTTTTAG CTGGAACCTT GATAACTGTA TCCGTGGCTT CTTTCTATC AACAGTAACC	2520
TGTTCCGTAA CATAACCAGT CTCTGGATTA ACATCGTAGG TCCTTGTCGT AGTTACATAG	2580
CCATCCTCTC CATCAATTGT AACAGGATTT TCACTACGGT CTTTGTGTTT ATCTTTTCA	2640
TAACGAATTC GCGTACTTGA AATTTTCTTG GTTACTACCT TAGGTTTAGT CGTACTTTT	2700
ACAATAATAT CCCCATGTGC AGCGTCATCA TACTCTATTC CCTCTTCTTT ATCTCTAGTA	2760
TCATCTCTGA CATATTGAAT CCCATCAGCA GCATGAACAA AACTTGATTT CAGATTCCCTC	2820
CTAAAAATAA AGTTAGCCCG ATTACCGCAG AACCAAAAAT CTTCCGAGT TTACGTATTG	2880
CATAGCGCTT ATTAGTATTA GATTTTGCCA TTACATCCTA CTTCTAGTAT AGCATCTTTT	2940

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CTATCAAACG TTAAACAATA TACGTTATAT ATAAATAGA CTTAGAATGA TATATTGATT	3000
ATTGAACTAA CACTTTAACT ATATCGTAAT CAATCTCATA TATAAAGGAT TGCAGACATC	3060
TTATCTAAAT ACATGCGAAT ATATTTAGAT ACAAACATTC CAACTTGATA AT	3112

(2) INFORMATION FOR SEQ ID NO: 117:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 4327 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 117:

CCCAAAAATC TCTTCAAACC ACGTCAGCTT CGCCTTGCCG TAGTATGGTT ACTGACTTCG	60
TCAGTTCTAT CCACAACCTC AAAACAGTGT TTTGAGCATC ATGCgGCTAG CTTCTTAGTT	120
TGCTCTTTGA TTTTCATTGA GTATAAAAC AGATGAGTTT CTGTTTCTT TTTATGGACT	180
ATAAATGTTT AGCTGAACT ACTTTCAAGG ACATTATTAT ATAAAAGAAT TTTTGAAC	240
TAAATCTAC TATATTACAC TATATTGAAA GCGTTTAAA AATGAGGTAT AATAAATTTA	300
CTAACGCTTA TAAAAAGTGA TAGAATCTAT TTTTATGTAT ATTTAAAGAT AGATTGCTGT	360
AAAAATAGTA GTAGCTATGC GAAATAACAG ATAGAGAGAA GGGATTGAAG CTTAGAAAAG	420
GGGAATAATA TGATATTTAA GGCATTCAAG AAAAAAAGC AGAGAAAAAG ACAAGTTGAA	480
CTACTTTTGA CAGTTTTTTT CGACAGTTTT CTGATTGATT TATTTCTTCA CTTATTTGGG	540
ATTGTCCCCT TTAAGCTGGA TAAGATTCTG ATTGTGAGCT TGATTATATT TCCCATTATT	600
TCTACAAGTA TTTATGCTTA TGAAAAGCTA TTTGAAAAG GTTTCGATAA GGATTGAGCA	660
GGAAGTATGG TGTAATAGC ATAGGCTGAT GTCCATCATT TGCTTATAAA GAGATATTTT	720
AGTTTAATTG CAGCGGTGTC CTGGTAGATA AACTAGATTG GCAGGAGTCT GATTGGAGAA	780
AGGAGAGGGG AAAATTGGCA CCAATTGAG ATAGTTGTT TAGTTCATTT TTGTCATTTA	840
AATGAAGTGT AGTAAAAGAA AGTTAATAAA AGACAACTA AGTGCATTTT CTGGAGTAAA	900
TGTCTTATTT CAGAAATCGG GATATAGATA TAGAGAGGAT CAGTATGAAT CGGAGTGTTT	960
AAGAACGTAA GTGTCGTTAT AGCATTAGGA AACTATCGGT AGGAGCGGTT TCTATGATTG	1020
TAGGAGCAGT GGTATTTGGA ACGTCTCCTG TTTTAGCTCA AGAAGGGGCA AGTGAGCAAC	1080
CTCTGGCAAA TGAACTCAA CTTTCGGGGG AGAGCTCAAC CCTAACTGAT ACAGAAAAGA	1140
GCCAGCCTTC TTCAGAGACT GAACTTTCTG GCAATAAGCA AGAACAAGAA AGGAAAGATA	1200
AGCAAGAAGA AAAAATCCA AGAGATTACT ATGCACGAGA TTTGGAAAAT GTCGAAACAG	1260

841

TGATAGAAAA AGAAGATGTT GAAACCAATG CTTCAAATGG TCAGAGAGTT GATTTATCAA	1320
GTGAACTAGA TAAACTAAAG AAACCTGAAA ACGCAACAGT TCACATGGAG TTTAAGCCAG	1380
ATGCCAAGGC CCCAGCATT C TATAATCTCT TTTCTGTGTC AAGTGCTACT AAAAAAGATG	1440
AGTACTTCAC TATGGCAGTT TACAATAATA CTGCTACTCT AGAGGGGCGT GGTTCGGATG	1500
GGAAACAGTT TTACAATAAT TACAACGATG CACCCTTAAA AGTTAAACCA GGTCAGTGGA	1560
ATTCTGTGAC TTTTCACAGTT GAAAAACCGA CAGCAGAACT ACCTAAAGGC CGAGTGCGCC	1620
TCTACGTAAA CGGGGTATTA TCTCGAACAA GTCTGAGATC TGGCAATTTC ATTAAAGATA	1680
TGCCAGATGT AACGCATGTG CAAATCGGAG CAACCAAGCG TGCCAACAAT ACGGTTTGGG	1740
GGTCAAATCT ACAGATTCGG AATCTCACTG TGTATAATCG TGCTTTAACA CCAGAAGAGG	1800
TACAAAAACG TAGTCAACTT TTTAAACGCT CAGATTTAGA AAAAAAATA CCTGAAGGAG	1860
CGGCTTTAAC AGAGAAAACG GACATATTCG AAAGCGGGCG TAACGGTAAC CCAAATAAAG	1920
ATGGAATCAA GAGTTATCGT ATTCCAGCAC TTCTCAAGAC AGATAAAGGA ACTTTGATCG	1980
CAGGTGCAGA TGAACGCCGT CTCCATTCGA GTGACTGGGG TGATATCGGT ATGGTCATCA	2040
GACGTAGTGA AGATAATGGT AAAACTTGGG GTGACCGAGT AACCATTACC AACTTACGTG	2100
ACAATCCAAA AGCTTCTGAC CCATCGATCG GTTCACCAGT GAATATCGAT ATGGTGTGG	2160
TTCAAGATCC TGAAACCAA CGAATCTTT CTATCTATGA CATGTTCCCA GAAGGAAGG	2220
GAATCTTTGG AATGTCTTCA CAAAAAGAAG AAGCCTACAA AAAAATCGAT GAAAAACCT	2280
ATCAAATCCT CTACCGTGAA GGAGAAAAGG GAGCTTATAC CATTTCGAGAA AATGGTACTG	2340
TCTATACACC AGATGGTAAG GCGACAGACT ATCGCGTTGT TGTAGATCCT GTTAAACCAG	2400
CCTATAGCGA CAAGGGTGAT CTATACAAGG GTGACCAATT ACTAGGAAAT ATCTACTTCA	2460
CAACAAACAA AACTTCTCCA TTTAGAATTG CCAAGGATAG CTATCTATGG ATGTCCTACA	2520
GTGATGACGA CGGGAAGACA TGGTCAGCTC CTCAAGATAT TACTCCGATG GTCAAAGCCG	2580
ATTGGATGAA ATTCTTGGGT GTAGGTCCTG GAACAGGAAT TGTACTTCGG AATGGGCCTC	2640
ACAAGGGACG GATTTTGATA CCGGTTTATA CGACTAATAA TGTATCTCAC TTAGATGGCT	2700
CGCAATCTTC TCGTGTATC TATTTCAGATG ATCATGGAAA AACTTGGCAT GCTGGAGAAG	2760
CGGTCAACGA TAACCGTCAG GTAGACGGTC AAAAGATCCA CTCTTCTACG ATGAACAATA	2820
GACGTGCGCA AAATACAGAA TCAACGGTGG TACAATAAA CAATGGAGAT GTTAAACTCT	2880
TTATGCGTGG TTGACTGGA GATCTTCAGG TTGCTACAAG TAAAGACGGA GGAGTGACTT	2940
GGGAGAAGGA TATCAAACGT TATCCACAGG TTAAAGATGT CTATGTTCAA ATGTCTGCTA	3000

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TCCATACGAT GCACGAAGGA AAAGAATACA TCATCCTCAG TAATGCAGGT GGACCGAAAC	3060
GTGAAATGG GATGGTCCAC TTGGCACGTG TCGAAGAAAA TGGTGAGTTG ACTTGGCTCA	3120
AACACAATCC AATTCAAAAA GGAGAGTTTG CCTATAATTC GCTCCAAGAA TTAGGAAATG	3180
GGGAGTATGG CATCTTGTAT GAACATACTG AAAAAGGACA AAATGCCTAT ACCCTATCAT	3240
TTAGAAAATT TAATTGGGAA TTTTGTAGCA AAAATCTGAT TTCTCCTACC GAAGCGAACT	3300
AGAGAGATGG GCAAAGGAGA GATGGGCAA GGAGTTATTG GCTTGGAGTT CGACTCAGAA	3360
GTATTGGTCA ACAAGGCTCC AACCCCTTCAA TTGGCAAATG GTAAAACAGC GACTTTCCTA	3420
ACCCAGTATG ATAGCAAGAC CTTGTTGTTT GCAGTAGATA AGGAAGATAT CGGACAGGAA	3480
ATTATTGGTA TAGCTAAAGG AAGCATCGAA AGTATGCATA ATCTTCCTGT AAATCTAGCA	3540
GGTGCCAGAG TTCCTGGCGG AGTAAATGGT AGCAAAGCAG CGGTGCATGA AGTTCAGAA	3600
TTTACAGGGG GAGTTAATGG TACAGAGCCA GCTGTTTCATG AAATCGCAGA GTATAAGGGA	3660
TCTGATTCGC TTGTAACCTCT TACTACAAAA AAAGATTATA CTTACAAAGC TCCTCTTGCT	3720
CAGCAGGCAC TTCCTGAAAC AGGAAACAAG GAGAGTGACC TCCTAGCTTC ACTAGGACTA	3780
ACAGCTTTCT TCCTTGGTCT GTTTACGCTA GGGAAAAAGA GAGAACAATA AGAGAAGAAT	3840
TCTAAACATT TGATTTTGTA AAAATGGCTC TTTGTCAACT GTAGTGGGTT GAAGTCAGCT	3900
AAGCTCGAGA AAGGACAAAT TTTGTCTTTT CTTTTTTGAT ATTCAGAGCG ATAAAAATCC	3960
GTTTTTTGAA GTTTTCAAAG TTCCGAAAAC CAAAGGCATT GCGCTTGATA AGTTTGATGA	4020
GATTATTGGT CGCTTCCAAT TTGGCGTTAG AATAGTGTAG TTGAAGGGCG TTGACGATTT	4080
TCTCTTTGTC CTTTAGAAAG GTTTTAAAGA CAGTCTGAAA AAGAGGATGA ACCTGCTTTA	4140
GATTGTCTC AATGAGTCCG AAAAATTTCT CCGGTTCTTT ATTCTGAAAG TGAAACAGCA	4200
AGAGTTGATA GAGCTGATAG TGATGTTTCA AGTCTTGTA ATAGCTCAA AGCTTGTTTA	4260
AAATCTCTTT ATTGGTTAAA TGCATACGAA AAGTAGGGCG ATAAAAATGT TTATCGCTGA	4320
GTTTACG	4327

(2) INFORMATION FOR SEQ ID NO: 118:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3521 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 118:

CTCTGGCCCT GCCACTCCAA CGTTTTGTCA GGGTGCTTTT TTCATAAAGG AGTTCTTATG	60
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843

TTAGATATCA AACGTATTCG TACAGATTTT GAAGCTGTCTG CAGAAAAATT AGCTACACGT	120
GGTGTAGATG CTGCTGTCTT GAATGAAATG AAAGAAATCG ATGCTAAACG TCGTAACATC	180
TTGGTCAAGG TTGAAACTCT CAAAGCAGAA CGTAACACAG TTTCTGCTGA GATTGCCCAA	240
GCTAAGCGCA ACAAGGAAAA TACAGATGAC AAGATTGCTG CCATGCAAAA TCTATCTGCT	300
GAGGTTAAAG CCTTGGATGC TGAATTGGCA GAAATCGATG CTAAATTGAC AGAATTTACA	360
ACGACTCTTC CAAATATCCC AGCTGACAGC GTTCCTGTTG GGGCTGACGA AGACGACAAT	420
GTGGAAGTTC GCCGTTGGGG TACTCCACGC GAGTTTGA CTGAACCTAA AGCTCACTGG	480
GATCTCGGTG AAGACCTTGG TATCCTTGAC TGGGAACGCG GTGGTAAGGT AACAGGCGCT	540
CGCTTCCTCT TCTATAAAGG CCTCGGTGCT CGTTTGGAAC GTGCTATCTA CAACTTTATG	600
TTGGATGAAC ATGGAAAAGA AGGCTATACT GAAGTCATCA CACCTTACAT AGTCAACCAT	660
GATTCTATGT TTGGTACTGG TCAGTATCCA AAATTTAAGG AAGATACTTT TGAAGTCAGC	720
GATACCAACT TTGTCTTGAT TCCAAGTCTG GAAGTTCCTC TGACAAACTA CTACCGTGAT	780
GAAATCTTAG ACGGCAAAGA TCTTCCAATC TACTTCACTG CCATGAGTCC GTCATTCCGT	840
TCTGAGGCTG GTTCTGCCGG TCGTGATACG CGTGGCTTGA TCCGTTTGCA CCAATTCCAC	900
AAGGTTGAAA TGGTCAAATT TGCCAAACCA GAAGAATCTT ACGAAGAATT GGAAAAATG	960
ACAGCCAACG CTGAAAACAT TCTTCAAAA CTCAACCTTC CATACCGTGT CGTTGCTCTC	1020
TCTACTGGAG ATATGGGCTT CTCAGCTGCG AAGACTTACG ACTTGGAAGT GTGGATTCCA	1080
GCACAAAACA ATTACCGTGA AATCTCAAGC TGTTCAAACA CAGAAGATTT CCAAGCCCGT	1140
CGTGCCCAAA TCCGTTACCG TGATGAAGCA GATGGCAAGG TGAAACTCCT TCATACCTTG	1200
AACGGTTC TGACTTGCAGT TGGACGTACA GTGGCTGCAA TTCTTGAAAA TTACCAAAAT	1260
GAAGATGGTT CTGTGACCAT CCCAGAAGCA CTTCTGCCAT ACATGGGTGG AGCTGAAGTC	1320
ATCAAACCAT AAAAAATAAG GTTTAGCTAT TTCTAGCTAG ACCTTTTTTTC GTAACCAAAT	1380
CAGATAAGCA CCTAGTACAA AGAATAAAAT AGTTAGGCAT ATAATGGTTT CAGCCAATAC	1440
CAGGTAATCC AGAAATGGAA GTTTCAAAAT TCCCTGAGCC ATCTTGAGCG AGGTCGCTGT	1500
GATAATGGTT GGAAGGTGA GGGCTGAGAA GGCTGGTTGA AAACCTTGTT TTAATAATGTT	1560
GGGCAGACGA GTTAAACAA AGAAAAAGAA GGATTGAGAA GCCAAATCA TGACAATCAA	1620
GACCCAAGTC GGCAGGCTGG TTCCTCCTAC TCGAACTAGA GAAGCCAAGA GTAGAGAGAA	1680
AGGAGCACAG TAGATTCCCT CTTGTCCAAG CAAGGCTAGT GGGAGTGGAT GTTCTTTTAA	1740
ATCGCTATAA ATAAGGGGAT AGAGATAGAA GGTCAAGAGA AAACCAAAAC TCAAGGTCGC	1800

844

ATAGGCAATT TCGATAATAC CTACCAGAGG ATAGGTCAAG GCAGCCACTG CTATCCCCAC	1860
ATAGAGAACC GTCCAGCTTG GAGTGGCATG AACCTCCGC CCTGGACAAG CAACTTGAT	1920
GGTAAACCA GCAATCAAGG TCAATCCAA GAGAAATGAA AACCACCAA TCCCTTGTGC	1980
TACCAAAGGA AGATAAGAGA ATACGCGAAA GACATAGGTC GATAAAATCA TCCCAGCCAT	2040
AGGAAAGGTT GCCATTCCCTG ACAAAGAGG GGGCTTGGTC AATTCTTGCT TGGTTTCTTT	2100
CCAATTAAAG AGATGCAGAA TTAGAAAGTA AATCCATAAA ACCAAACCAA TCAGACTAAA	2160
AAGATGGGAT AGAACC GGCA ACGTATCTAA AATAAGATTT CCAGCTCCTG CCAAACCTAG	2220
CAAACAACCT GAAAATACTA AGGGGAGTTT TTTCATCCTA ACCTCCAATA ATCATGTTAG	2280
TTTCAGTATA ACATAAAAGC GCTTAAATGA GGATTTAAAA AAACGAGTCC GCTTATTTCA	2340
GACTTCATTT TACTCAGATA TGAATTAGGC ATAAGTTGC AATTCTGGAT TAATTGGTGT	2400
ATTAGCTAAG TTGTTGGCAT AGTTACAGAG GATTGCTAGG CTGACACCAA AAACCACATC	2460
CAAGGCATTT TGTGAGTGT AGCCAGCTTC TAAAACTCA GACAAGGCTT CATCTCCTAC	2520
ACGACCTTG GTATTGATAA CTGCCAAGGT AAAGTTAGCT AGGGTATCCA ATTTAGGATC	2580
TGTTTCAATT GGAGTACGAT TCGGAAGAGC TTGAATCAAG TCATCATTCA TCTGGATTTG	2640
TTTGATGGAA AAGGCTGTGT GACCTGCGAC ACAGAAGGCA CAACCATTTG TCACGGCTGC	2700
CGTGATTTGC ACCACTTCAC GCTCAACGGG TGTCAGGCTG TTGCGACGGT GGATAGATGA	2760
GACAATTTGG TAGGCTTCTA AAACAGTCGG GGCATTGGCC AAGAGACCGA TTAGGTTGGG	2820
AATATAGCCA TTGTTGTCTT TTTCTACTGT TTCAAGAATT TCTTTCACTT CTGCTGGTGC	2880
TGACTCTACT GTATGGATAG TAAATGTTGT CATAAGATAC CTCTTTTCTT ATTATTGACA	2940
CTAATATTAT TGGAAAATCT TATAAAATCC TGATTCTTAA GTTTATCTAA GATAAAGCTT	3000
TATTCTCTCA TAAGATTTTC GTTGTTATAT TAGTTTATCA CACTTCCAAT CACTTGATATA	3060
ATATATATTA TATATCAGGC TGATAAAAT TATTTATAGG CAAAAAATC ACACGAGCTG	3120
TGTGATTCCA TTATTTGTCA AAATACTTTT TAGTTTCAGC AATAACGACT GCGACAAGA	3180
CCAAGAGGGC AATCAAGTTT GGCAGAGCCA TCAAGGCGTT AACGATATCT GCGATAATCC	3240
AGACCATATC CAACTCGATA AATCCTCCTA ACAAGACCAT GAGCACAAA ACCACACGGT	3300
AGAGCCAGAT AAAGCGAACC CCAAAGAGGA ACTCAAAACA GCGTTCTCCG TAATAGTTCC	3360
AACCTAGAAT CGTTGTAAAG GCAAAAAGTA CAAGGAAGAT GGTCAAGAGA GCAGGCCCAA	3420
AGTGTGAAAA GTTTGTTGAG AAAGCTGACT GAGTCAAGGC AACCCCATTC AAGTCACCGC	3480
TCCAACTCC AGTTACCAAG ATGGTCAAAC CAGTTAGAGT A	3521

(2) INFORMATION FOR SEQ ID NO: 119:

845

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1968 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 119:

AACCTGGGCA AGCAAGCTAA AAGCAATGGG ACCTGGAATC CTAATGGCAA CTGCCGCTGT	60
TGGAGGTTC CACATTGTAT CCTCAACTCA AGCTGGCGGT TCTTACGGTT GGTCTCTACT	120
TCTCTTGGTC ATCTTAGCCA ATGTCTTTAA ATATCCATTT TTCCGTTTGT GTGCTGAATA	180
CACAGCTGAT ACTGGAAAGA CTTTGGTTGA AGGTTATGCC GAAAAAGGAA AACTCTATCT	240
CTGGATTTTC TTTATCCTCA ATGTCTTTTC GGCTATGGTC AACACGGCTG GTGTTGCCAT	300
TCTGTGCTCA GCTATCATCG CCAGTGCCTT CCCAATGATT GGACTTAGCA TTA CT CAGTG	360
GTCCCTCATT CTCGTGCAA TCATTGCGG TATGCTACTC TTTGGAGGCT ACAAACCTTT	420
AGACGGCATG GTCAAATGGA TTATGTCTGC CTTAACCATT GCGACTGTTC TTGCAGTTAT	480
CATTGCGGCG GTCAAGCATC CAGAATACAG TTCTGATTTT GTCGAGAAGA CACCTTGGCA	540
AATGGCAGCT CTGCCCTTCA TCGTCTCCCT CCTAGGATGG ATGCCGGCTC CTATTGAAAT	600
TTCAGCCATC AATTCACTTT GGTCAGCTGA AAAGAGAAAG ACCGTCAACT TTAACACAGA	660
AGACGCTCTG TTTGACTTTA AACTTGGTTA TATTGAACA GCTATCCTAG CCGTCTTCTT	720
TGTGGCACTG GGAGCACTGA TTCAGTATCC TACAGGGCAG GCGGTTGAAG CTGCTTCAGC	780
CAAATACATC TCTCAATTCG TGGGCATGTA TGCCTCTGTT CTTGGCGAAT GGTCCCGTTA	840
CTTGATTACC TTTATTCCT TCCTCTGTAT CTTTGAACA GTTATAACTG TTATCGATGG	900
CTATTCTCGC GTTAATCAGG AATCTCTCCG ACTGCTAATC AGTCAAAAAG AGGACAATCG	960
TAAATCTTTG AACATCTGGA TGACCATCAC TGCTATCATC GGTATCGTCA TTATCAAGTT	1020
CTTCGCTGGT CAGGTTTCAA CCATGCTCCG CTTTGCCATG ATTGGCTCTT TCCTGACAAC	1080
ACCTTTCTTT GCTCTTTTGA ATTACGCCTT GGTAACGCGT GAAAACAAAA ATCTTCCTTC	1140
TTGGCTCAAA CACCTTGCCA TTGCGGGATT GATTTTCCTC TTTGCTTCGC CATCTTCTTT	1200
ATCTACGCAC TCGCAATCGG AAAAGCAGGG TAAGGGACAA GCGCGAGATG AAGATAAGGT	1260
TTCATTTCAA GAGAAAATTC AGCAAATATT TCTATGATAA AAAGCATAAG AACAAGGTTT	1320
TGAAGACCTG AACTTATGCT TTTTACGTT CTTAAAGACT GTTTATACTC AAAAAACAGT	1380
TGAACAACTT CAACCACTC TTATAAGAAC TTTATACTAT TCGAGAATCT CTTCAAACCA	1440

846

CGTCAGCTCT ATCTGCAACC TCAAAGCTGT GCTTTGAGCA ACCTGCGACT AGCTTCCTAG	1500
TTTGCTCTTT GATTTTCATT GAGTATTAAT TCTCCTTTTC CAACTCATAC AAATCTGCGA	1560
TAATAGCTGC GACATGTTTG ATATCTTCCA GCATGCCTCG CATTTCAAAG TCAGCCAATA	1620
CAGGGAAGCC AAAGCGTTGA CTGTATTGCT TGGCTGTTAG GCAGTATTGG TTATTAAAGT	1680
TACGATTTC TGACCCAACC ACACCAAAAC ACTTACTAGC ATTGTTACCA TAGGCAATAA	1740
AATCTCCAC CGGTGTCGTC AAAATCTCAA CATCTCCGT ATCCACGCCA TTCCACCTT	1800
CGAGATAGGT CGGCAAAAA GCGACATAGG GATGGTCCAT TTCATAGAAA TTTTGCCTT	1860
CCTTGACCAA ATCCTTGATA TGAATCTTTT GAACCTCAAT CCCTTTGTAC TGGGACAAGA	1920
GATAGTCTTT CAAGCGCGTC ACAAACCTTT CAGTGTGCC ACTCAAGG	1968

(2) INFORMATION FOR SEQ ID NO: 120:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 7172 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 120:

CCGCATTTTT TATCACTAGA CTCGAGACAT CTTTGAGTG GCTCTTGCTC TCTGGTTTAA	60
TTTTCTTCCT TGCTCAAGGA CTCCTGCTAT TTCTCTTGGT CGTCCGACTC AAACATCAAT	120
TCGCTGAGAT TTATCCTCAA ATCAATAAAA AGATTCGCTT CTACTATTTA GGGGTTCTCA	180
CCATTGATTT TCTATTTTTT GTTCTCTTAG CCTTCATTAG TTCTCAGCGT TTTTCATCTC	240
TTATGCCAAT CATCACTGCT TGCCATTCTA CTTTTTATTA TATGACAGCT GACTACCTAA	300
GAGAAACTA TCCAGACTTT TACGACAAAC ACATCTCTTT ATGGGAGTGT CTCTAAAGAA	360
AAGGAGGTTT TAGCATGAAA AAAATCATCT TCATCAAAAC CATTCAACTC CTTGTCATTG	420
ATGGAATCAT GCTGGCATT TTAGCATTTA AAAGGGGGCT TACTTGGGAC TGGATTTTGA	480
TTTATAGCGG TTGGCTCATT TTCTTTCATC CTGTGCTATT GACCTATCTT TCAAACCAAC	540
TTTGTGACCA CTTTAGTTAA CTCTATTCCC AGATTAGACC GAGATTCTGG CGTTTGTCTT	600
TACAAATTCT CCTATGGGAT AGCCTGATGA TTCTCTCCTT GGTGCTTTTA AGTGATATTC	660
CACTTTTCCT TCAGGGAAC CTCTCATCC TAGGACATCT CATCCCTTCC TATCGCATCT	720
GCCAAAGCCT GAAAAGAGAC TTCCCCAAG CATATCAAGA ACCGATTCTT TTTTGGAGTA	780
TTTTATGATA GATGAGAAAG ACCAAGCCGA CTGGGCTTGG TCTTTCTTAT CTCTTTTATG	840
TATCTAGGAT AATGGTAACA GGTCCATTAT TAACCAGCTC AACCTGCATA TCTGCTCCAA	900

847

AGATGCCTGT CTGAACGGGC ACTTCTTGCG CTAATTTTGG ATTGAAAGCA TCATAGAAGT	960
CTGATGCCAT ATCAGGTTTA GCTGCCCTG TAAAGCTGG ACGATTGCCT CTCTTAGTAT	1020
CCGCAAAGAG GGTAACTGA GAAATAGAGA GGATTTCTCC TTCAATATCT TTGACAGACA	1080
GGTTCATCTT GCCTTCTGCG TCTGAAAAA TCCGCATATT GACCAGTTT CTCACAGCAT	1140
AGTCCAAATC TTCCTCTTGG TCCTCTGGTC CAACACCAAC CAGCAATAAA AGTCCCTGAT	1200
TGATTTTCC CTGAATCTGG CCTTCTATAC TCACTTGGG TTTTAAACC CGTTGGATAA	1260
TGATTTTCAT AATAGCCTTT CTAGTAAGAG CTAGGACAAC TAGCCGTTGG TCCGTTGAC	1320
AGAGTAACT TCTGGCACAC TCTTAATTT ATCGACAACC GTGGTCAGTG TAGAGAGGTT	1380
GGCAATACCG AAGGACACAT GGATATTAGC AACTTCATA TCCTTGGTTG GTTGGGCATT	1440
GACCGTTGAA ATATTCTTGG TTGTATTGA AAGAACTGC AGTACATCGT TCAACAGTCC	1500
TGTACGGTTG AGACCGTAGA TATCGATATG GGCCATATAC TCCTTATTG AGCTAGGGTA	1560
CTGGTCTTCC CATTCACAT CAAGGAGACG TTGCTCGTAG TTTTCTTGG CACGCAGGTT	1620
CATACAGTCC ACACGGTGAA TAGCCACACC ACGACCCTG GTAATGTAGC CAACAATATC	1680
GTCACCAGGC ACGGGGTAC AACACTTAGC AATCCGCACT AGGAGACCAG AAGCACCTTC	1740
AATAACCACT CCCCCCTCAT GCTTGACCTT GAGGGTTTCT TTATTTTCAA CCTTGACCTC	1800
GCCACCTTGG ACAAGCTCCT CTGCCTCAGC TTGGCCTTG GCACGCTCTT CCTCACGGCG	1860
TTCTTTTCA GTCAGACGGT TAAAGACGGT AATCGCACCG ATTTCCCAA AACCAATGGC	1920
CGCAAAGAGG GAGTCTCTG TCTGTAACT GGTCTTTTGC AGAACTTGAT CCATGTGGCG	1980
CTGTCCATA AATTTATTG CCACATAGCC ATTTTCTTGG AACTGAGCCA TCAGCATCTC	2040
ACGACCCTTG TTGACAGACA ATTCCTTATC TTGGTTTTTA AAGAACTGGC GAATCTTAT	2100
GCGCGCCTTG CTAGTCTTGA CCATATTGAG CCAGTCACGG CTAGGTCCAA AGGAGTTCCG	2160
GTTGGCGATA ATTTCAACCT GATCCCCTGT CTTAACTTG GTTGTCACTG GAACCATGCG	2220
GCCATTGACC TTGGCACCAG TTGCTTTTTC ACCGACCTTG GTATGGATT CGTAGGCAAA	2280
ATCAATCGGT CCTGAATCTT TGGGAAGGGA ACGGACAGCT CCATCTGGG TAAAAACGTA	2340
AATCTCCTCA GCCAAATAGT TTTCCTTAAC AGAGTCCACA AATTCCTTAG CATCATCAGC	2400
CTGGTCTTGG AGCTCCATCA TCTCCTTGAT CCAGTTCATT CCAATAGCTG ATTCCTTGCT	2460
GTAACTTGC CCCTTTATAC CTTTCTTATA AGCCCAGTGA GCCGCAACCC CGTACTCAGC	2520
CACCTCGTGC ATTTCTTGG TTCGAATCTG GAATTCAATC GGCCCTTTTG GTCCATAAAC	2580
AGTCGTATGG ATAGACTGAT AACCATTGGC CTTGCGGTTG GCGATATAGT CTTGAAGCG	2640

848

ACCTGGCATC	GGTTTCCAAA	ATTTCATGCAC	GTAACCAAGC	ATGGCATAAA	CATCACTTTG	2700
GGTATCTAAA	ATACAACGAA	TAGCAATCAG	ATCATAGATT	TCCTCAAACC	GTTTTCTCTT	2760
GTCCTGCATT	TTGCGGAAAA	TTGAGTAAAT	ATGCTTGGGA	CGACCATAAA	TCTTCCCTTT	2820
CAAGTGACGT	TCTGTCGTAT	ACTCCTCTAA	TTTTGTGACT	ACCTCATCCA	CCAAGGCCTC	2880
ACGCTCCCTG	CGCTTTTCCT	TCATCATATG	GGTAATCTTG	TAAACTCCG	TTGGATTGAG	2940
ATAACGGAAA	GACAAGTCTT	CTAATTCCCA	TTTGACACTG	GAAATCCCA	AACGATGGGC	3000
AAGCGGGGCA	TAGATTTCCA	TGGTTTCTTT	GGAAATACGC	TCCTGCTTGT	CTTTTCGAAG	3060
ATGTTTCAGG	GTCCGCATAT	TGTGCAAGCG	GTCAGACAGT	TTGACCAAAA	TAACGCGGAT	3120
GTCCTCAGAC	ATGGCCATGA	GCATCTTGCG	ATGATTTTCC	GCTAATTGCT	CCTCGATCGA	3180
TTTGTACTION	ACCTTGCCAA	GCTTGGTAAC	TCCGTCAACA	ATCATCCGCA	CATCAGGACC	3240
AAACTCTCTT	TCCAAATCGT	CCAAAGTCGC	ATCTGTATCT	TCCACCACAT	CATGCAAGAA	3300
TCCACAAGCT	ACTGTTACAG	CATCCAGCTT	TAGCTTAGCT	AAAATACCTG	CCACTTGGAT	3360
AGGGTGAATG	ATATAAGGCT	CGCCTGATTT	GCGATATTGA	CCACTGTGGC	ATTCAACAGC	3420
ATAGACCAAG	GCCTTATGGA	CAAAATGAAC	ATCCTCTTCC	GTTAAATATT	CTTTGGTTAA	3480
AGCGACAAC	TCTTCGCCTG	TTAAATTCAC	TTCTTTCGGC	ATCTCTACTC	TCCAATTCTT	3540
CCTACCATTT	TATCACTTTT	TTAAGAATAT	GAAAACCTAGA	TTGGAACAGA	ATAAGAAAAA	3600
AATAATTCAA	AATTGCTTGA	TAATTCTGAA	TTATTGGTCC	GTAATATACT	ACGAAGTTAG	3660
ATTTTAAACT	TAGGTGATAG	AAGGAGAGAT	AGAAGAACGG	AAACCATATT	GTAACCCAAA	3720
GACTTTCTGA	CTTCCCAAT	TCCATTGAAG	ATACGAAAGA	TAAACGGTGG	AACTCGTATC	3780
ACATACACTG	GTACCTTGAC	TGGATTTTGG	AATTAATACT	AAATGAAAAT	CAAAGAGCAA	3840
ACTAGGAAAC	TAGCCGCAGG	TTACTCAAAG	CACCGCTTTG	AGGTTGCAGA	TAAAGTTGAC	3900
GCGGTTTGAA	GAGATTTTGG	AAGAGTATAA	AAATCCTCAA	GATACTTTCT	TCTATCCTTT	3960
AGTTTATAAG	GAGAATACCT	ATGAAAAAAA	CTGCTATTTT	TATCTTTGCT	CTCCTAATGT	4020
TAGGAGTTTG	CTGCCTGTTT	CTATTCAGCC	AGCAAAGCTA	TAAAAAACAG	TCGTTCAATA	4080
CTATGCTAAC	GACCAGAACC	TGCCAGTAG	GATAACTTAT	AGTGAATATA	GCGACAAATG	4140
AGAAGCCAAC	TACGGTAGCA	CTCTAAACAT	CACGTCTATC	AAACAAGCTA	ATGACGGAGT	4200
TTATGCAACC	TATGAAGGGC	AATTGACACC	TTTCCAATAT	TGATAAATTG	ATAACCAGCC	4260
TGTCTTCATC	TAGTCATGCT	GGTTTTTAAG	TTCATTTTAA	ATCCTTACCT	ATTCTCCCTA	4320
ACTGTGCTAT	ACTTAATTTA	TACTCAATGA	AAATCAAAGA	GCAAACTAGA	AAGCTAGCCG	4380
CAGGCTGTTT	AAAGCACTGC	TTTGAGGTTG	CAGATAAAGT	TGACGCGGTT	TGAAGAGATT	4440

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TTCGAAGAGT	ATTAGTACAT	TCTTTGAGAT	TGGAGCTAGT	ATGAAAATCC	ATAAAACCGT	4500
GAATCCTGTT	GCCTATGAAA	ATACCTATTA	TCTAGAAGGC	GAAAAGCACC	TCATCGTCGT	4560
CGATCCTGGT	AGTCATTGGG	AAGCCATTCG	TCAGACAATC	GAGAAGATCA	ACAAACCGAT	4620
CTGTGCTATT	CTCTTGACCC	ACGCCCATTA	TGACCATATC	ATGAGTCTGG	ACTTGGTTCG	4680
CGAGACGTTT	GGCAATCCTC	CTGTCTATAT	CGCAGAGAGC	GAAGCCAGCT	GGCTCTACAC	4740
TCCTGTGAT	AATCTCTCCG	GTCTCCCTCG	CCACGATGAT	ATGGCAGATG	TGGTCACAAA	4800
ACCTGCAGAA	CACACCTTTG	TCTTTCACGA	AGAATACCAA	CTAGAGGAAT	TTGTTTAA	4860
GGTTCACCG	ACCCAGGGC	ACTCTATCGG	TGGTGTTC	CTAGTCTTTC	CTGATGCTCA	4920
TCTAGTCTTG	ACGGGAGATG	CTCTATTCCG	CGAAACTATC	GGACGGACCG	ACCTTCCGAC	4980
TGGTAGCATG	GAGCAACTCC	TTCATAGTAT	CCAGACCCAA	CTCTTCACCC	TACCAAACTA	5040
CGATGTCTAT	CCAGGACATG	GTCCAGCTAC	TACTATCGCT	CACGAAAAGG	CCTTCAATCC	5100
CTTTTCTAG	CAAGATGATG	ACAATCGAAA	TTTAAGTAAA	CTATCCAGCA	AATCTTTCTA	5160
TTACAAAAGG	CATCCTATCA	AGGTTTTCAC	ACATGATTGG	ATGCCTTTT	TCTGATGACT	5220
AGATTTTGTG	CATTACCAAA	TAATCACGCG	CTCCTCTGGT	GAACGCCACA	TTCCGTCTCC	5280
TTCTTTGACA	TCATAGGTTG	TAAAGAAATC	GTGGAAGTTT	GGTACTTGCA	CATTGACACG	5340
GAGTTTGGCT	GGTGCGTGCA	CATCGACGCT	AGCCAAAAGT	TTCATAAATT	CTGGTCGACC	5400
TTTCATGCGC	CAGATGCGAC	CGAAGTTGTA	GAAGAACTCT	TCTGCTGAGA	AGTCTGCTTC	5460
TCTCTTAGCT	GCTTCAAGCG	CTGCTGCGAT	TCCTCCCAAG	TCAGCCACGT	TTTCTGATAC	5520
AGTCAATTTA	CCGTAAATGG	TTGCTCCATA	AGAATCCTGT	CCATCAAATT	GGTCAATGAC	5580
TTTTTGTGTT	TTCTCCTTGA	AGGCAGCATA	GTGCTCTCT	GTCCACCAAT	CCTTGAGGCT	5640
ACCATTTTCG	TCAAAGGAAG	CCCCGTTAGT	ATCAAAGGCG	TGGGAAATTT	CATGGGCAAT	5700
CACTGCCCCA	ATACCACCGT	AGTTAGCAGA	AGATGACTGA	TGCAAGTCAT	AGAAAGGCGC	5760
CTGTAAAATG	GCCGCTGGAA	AGACAATCAG	GTTCTTCTGA	GGATTGTAGT	AGGCATTGAC	5820
CATATGAGCA	GGCATGCCCC	ATTCCTTATA	ATCTACAGGC	TGGTTCCACT	TACTCCAAT	5880
GTGCTTGATT	TCCACACGCG	CAAAGGCTAG	AGCATTCTCA	AAAAGACTGG	CAGTTTCATT	5940
CACTACCTTA	TCCTTGTAAC	GTGCAGGCAA	TTCTTCTGGA	TAGCCAATAT	AAGTTTGTAT	6000
CACATTGAGC	TTCACGATAG	CCTGTTTACA	GGTTTCTGGA	GTGAGCCAGT	CATTCTTAAG	6060
CAGACGCTCC	TTATAAACAT	CAATCATGGT	TGCCACTTTT	TTCTCCACAT	CCGCCTTGGC	6120
TTCTGGAGAG	AACTTCTCAC	GGGCGTACCA	AAGACCCAGG	GCTTGCTTGA	AAGTTTCTTG	6180

850

TGCTAGATGA TAAGCTGCTT TGACCTTATC TTTTGCCCTCT GGAAGTCCAG AAAGGGCAGC	6240
GCTGTAGGCA CCAGACAAAA CACGGATATC CTCTGTAAA TAGCTGGTTG AAAGATTGAC	6300
AACACTCAAA ATCAAGGTTG CTTTAAGGAG AGACCAGGCT TCCTCACTGT AGAATTGCTC	6360
TGCTGCTTGC CAGAAACGTT CCTCGTCTAC AATAACCTTG TCTGGTAATT GCCCAATAAC	6420
TGCTTTGAAG AAGTCATCCA AAGGTAGGGC AGGCGCGAAT TTCTTGAAAT CTTGTAAGA	6480
ATATGGATGA TAGAGTTTAG CATATTCTGA ACTTCTTCA TTAGAGAGCA CCACTGCCGC	6540
AACCTGGCGG TCCAATTCAA GTCTTTTTC TAGCAAGTCT TCAATTTCTT CATCAGAGAA	6600
ATCATAAGCC TTGAGGAGAT TTGCGCTGCT TTCTTTCAA AGAGTCAAGA GCTCTTCGCG	6660
CTGAGGATGT TCTTCTGCAT AGTAGGCTGT ATCTGGCAAG ATTGTGCTTG GAGCGCTAGC	6720
CCATAGAACA TTGATTCTAG CATCCATAAA GTCTGGCGAT ACACCAAAAG GAAGGAAGTT	6780
TGGTTTTCCT GCAAGCTCAA ACTCTGCTAG TTTAGCTGTA AAATCCGCA AAGTCTCAA	6840
TTCTTGAAT TCTTTAAGGA GTGGTAAGAC AGGTGTGATA CCGTCAGCTT CTCTCTGTC	6900
AAAATCACGA ACTAGGCGGT GGTATTTGAC AAAGTTTTC AAGATAGCAT CCTCAGGCAC	6960
TTCTTCACCT GCTAACCCT TGTCTGTTGT CGCCAGCATC AGGTCTTCAA TTTCCTGGTC	7020
TAAATCAACA AAACCTCCTG TTTGAGACTT ATCTGCTGGG ATTTCACTG TCTGTTGCCA	7080
TTCTCCATTG ATAGCATCAT AAAAAATC TTTGATAACGT GTCATCTTGT TCTCGCTTTC	7140
ATTTGTATTT GCATTTATCT TAACAAAAAT CG	7172

(2) INFORMATION FOR SEQ ID NO: 121:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 4518 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 121:

CGGGAAGTTA TCGATCTAG ACTTCGTTCC TGTACAGCTA CTTTCTCAGG TGGTCTTGTT	60
GTTTGTATGA GTTGTTTAG AGAGGATCTT TCTATGTCTT TCTTTCTTAT TTTTGTTTTA	120
TATGCTTTTC TGATTTCTTA TCTAATTAT GGTATTTC AACTAAAAAG GAAATACCGA	180
GATAGTGAAT AGCAAGGTTT TAGGTCTTCA GATTGATTTT TAGCACTCTT GATAAAAGAG	240
TGCTAATTTT TTGAGTTTGT GTCTTGACAT TCTCTTCTAA GGGTGTATAA TAGAATCATG	300
AGTTAGCACT TGGATGCATT GAGTGCTAAT TGATCAGACA GAGAGGAGTG ATGAGATGGT	360
TACAGAGCGT CAGCAGGATA TTTTAAATCT GATTATTGAC ATCTTTACCA AAACGCACGA	420

851

ACCTGTCGGA TCAAAAGCCT TGCAAGAGTC TATTAACCTCT AGCAGTGCAA CCATTCGTAA	480
TGACATGGCG GAACTAGAAA AACAAAGGTT GCTTGAGAAG GCTCATACTT CAAGTGGTCG	540
GATGCCAAGT GTTGCTGGTT TTCAGTACTA TGTGAAACAC TCACTGGATT TTGACCGGCT	600
GGCTGAAAAT GAGGTATATG AGATTGTCAA AGCCTTTGAT CAGGAATTCT TCAAATTGGA	660
GGATATTCTG CAAGAGGCTG CTAACCTACT AACAGACCTG AGTGGCTGTA CGGTAGTGGC	720
ACTGGATGTT GAGCCGAGCA GGCAACGTTT GACAGCCTTT GATATCGTTG TTTTGGGGCA	780
ACATACAGCC TTGGCGGTAT TTACCCTAGA CGAGTCGCGA ACGGTTACTA GTCAGTTTCT	840
GATTCCAAGG AACTTCTTGC AGGAGGATTT GCTGAAACTG AAGAGCATCA TTCAGGAACG	900
TTTCCTCGGT CACACCGTTT TAGATATTCA CTACAAGATT CGGACGGAGA TTCCGCAGAT	960
TATCCAGCGT TACTTTACAA CAACGGATAA TGTATCGAT CTCTTTGAAC ACATCTTTAA	1020
GGAAATGTTT AACGAAAACA TTGTGATGGC GGGCAAGGTC CATCTCTTGA ATTTTGCCAA	1080
TCTAGCAGCC TATCAGTTCT TTGACCAACC GCAAAAGGTG GCCTTGGAGA TTCGTGAGGG	1140
GTTGCGTGAG GATCAGATGC AAAATGTTTCG TGTTCGAGAC GGTCAGAGT CCTGTTTAGC	1200
TGACCTAGCG GTAATCAGTA GTAAGTTCCT CATTCCTTAT CGGGGAGTTG GAATTCTAGC	1260
CATTATCGGT CCAGTTAATC TGGATTACCA ACAGCTAATC AATCAAGTCA ATGTGGTCAA	1320
CCGTGTTTTG ACCATGAAGT TGACAGATTT TTACCGCTAC CTCAGCAGTA ATCATTACGA	1380
AGTACATTAA GATTGAAATC ATTAAAGGAG GCGAACATGG CCCAAGATAT AAAAAATGAA	1440
GAAGTAGAAG AAGTTCAAGA AGAGGAAGTT GTGAAAACAG CTGAAGAAAC AACTCCTGAA	1500
AAGTCTGAGT TGGACTTGGC AAATGAACGT GCAGATGAGT TCGAAAACAA ATATCTTCGC	1560
GCTCATGCAG AAATGCAAAA TATCCAACGC CGTGCCAATG AAGAACGTCA AACTTGCAA	1620
CGTTATCGTA GCCAGGACTT GGCAAAAGCA ATCTTACCAT CTCTTGACAA CCTTGAGCGT	1680
GCACTTGACG TTGAAGGTTT GACAGATGAT GTGAAGAAGG GCTTGGGGAT GGTGCAAGAA	1740
AGCTTGATTC ACGCTTTGAA AGAAGAAGGA ATTGAAGAAA TCGCAGCAGA TGGCGAATTT	1800
GACCATAACT ACCATATGGC CATCCAACT CTCCCAGCAG ACGATGAACA CCCAGTAGAT	1860
ACCATCGCTC AAGTCTTTCA AAAAGGCTAC AAACCTCATG ACCGCATCCT ACGCCAGCA	1920
ATGGTAGTGG TGTATAACTA AGATATAAAG CCCGTAAAAA GCTCGCAGTA AAAATAGGAG	1980
ATTGACGAAG TGTTGATGA ACACAAGAAA ATCTATCTTT TTTACTCAGA GCTTAGGGCG	2040
TGTTGATTC GGCAATTCTG ACGGTAGCTA AAGCAACTCG TCAGAAAACG GCAATCGCTA	2100
TGGCGTTTGC CTAGCTTCCT TACTAACTCG TCGTCGAAAT AAAATCGATT TCGACTCCTC	2160

852

GTGTCGCAAT TTACATAATA GAAAACTTGT CCGAAACGAC AATAAACTAT GAAGAAAGAT	2220
AAAAATATGTT TGGCTTTGTA ATAGTGAGCG AAGCGAACCA AACACGATAC TCTTCGCCGT	2280
GGCGCTATTT GCGCAAATTT TGAGACCTTA GGCTCAAAGT TTAGTCAAAG AGATTGACGA	2340
AGTCAAGCTC TGACGGCGTC GCCACTGTCT CCACTTAAGA AGAGTATCAA AAAGAAAAAT	2400
AGAAAAATTAA CTAACAAGGA GAAAAACACA TGTCTAAAAT TATCGGTATT GACTTAGGTA	2460
CAACAACTC AGCAGTTGCA GTTCTTGAAG GAACTGAAAG CAAAATCATC GCAAACCCAG	2520
AAGGAAACCG CACAACTCCA TCTGTAGTCT CATTCAAAAA CGGAGAAATC ATCGTTGGTG	2580
ATGCTGCAAA ACGTCAAGCA GTTACAAACC CAGATACAGT TATCTCTATC AAATCTAAGA	2640
TGGGAACCTC TGA AAAAGTT TCTGCAAATG GAAAAGAATA CACTCCACAA GAAATCTCAG	2700
CTATGATCCT TCAATACTTG AAAGGCTACG CTGAAGACTA CCTTGGTGAG AAAGTAACCA	2760
AAGCTGTTAT CACAGTCCG GCTTACTTCA ACGACGCTCA ACGTCAAGCA ACAAAGACG	2820
CTGGTAAAAT TGCTGGTCTT GAAGTAGAAC GTATTGTAA CGAACCAACT GCAGCAGCTC	2880
TTGCTTATGG TTTGGACAAG ACTGACAAAG AAGAAAAAT CTGGTATTT GACCTTGGTG	2940
GTGGTACATT CGACGTCTCT ATCCTTGAAT TGGGTGACGG TGTCTTCGAC GTATTGTCAA	3000
CTGCAGGGA CAACAACTT GGTGGTGACG ACTTTGACCA AAAAATCATT GACCACTTGG	3060
TAGCAGAATT CAAGAAAGAA AACGGTATCG ACTTGTCTAC TGACAAGATG GCAATGCAAC	3120
GTTTGAAAGA TGCGGCTGAA AAAGCGAAGA AAGACCTTTC TGGTGTAAT TCAACACAAA	3180
TCAGCTTGCC ATTTATCACT GCAGGTGAGG CTGGACCTCT TCACTTGGA ATGACTTTGA	3240
CTCGTGCGAA ATTTGACGAT TTGACTCGTG ACCTTGTTGA ACGTACAAAA GTTCCAGTTC	3300
GTCAAGCCCT TTCAGATGCA GGTTTGAGCT TGTCAGAAAT CGACGAAGTT ATCCTTGTTG	3360
GTGGTTCAAC TCGTATCCCT GCCGTTGTTG AAGCTGTTAA AGCTGAACT GGTAAAGAAC	3420
CAACAAATC AGTAAACCCT GATGAAGTAG TTGCTATGGG TGCGGCTATC CAAGGTGGTG	3480
TGATTACTGG TGATGTCAAG GACGTTGTCC TTCTTGATGT AACGCCATTG TCACTTGGTA	3540
TCGAAACAAT GGGTGGAGTA TTTACAAAAC TTATCGATCG CAACACTACA ATCCCAACAT	3600
CTAAATCACA AGTCTTCTCA ACAGCAGCAG ACAACCAACC AGCCGTTGAT ATCCACGTTT	3660
TTCAAGGTGA ACGCCCAATG GCAGCAGATA ACAAGACTCT TGGACGCTTC CAATTGACTG	3720
ATATCCCAGC TGCACCTCGT GGAATTCCTC AAATCGAAGT AACATTTGAC ATCGACAAGA	3780
ACGGTATCGT GTCTGTTAAG GCCAAAGACC TTGGAATCA AAAAGAACAA ACTATTGTCA	3840
TCCAATCGAA CTCAGGTTTG ACTGACGAAG AAATCGACCG CATGATGAAA GATGCAGAAG	3900
CAAACGCTGA AGCCGATAAG AAACGTAAAG AAGAAGTAGA CCTTCGTAAT GAAGTAGACC	3960

853

AAGCAATCTT TGC GACTGAA AAGACAATCA AGGAAACTGA AGGTAAAGGC TTCGACGCAG	4020
AACGTGACGC TGCCCAAGCT GCCCTTGATG ACCTTAAGAA AGCTCAAGAA GACAACAAC	4080
TGGACGACAT GAAAACAAA CTTGAAGCAT TGAACGAAAA AGCTCAAGGA CTTGCTGT	4140
AACTCTACGA ACAAGCCGCA GCAGCGCAAC AAGCTCAAGA AGGAGCAGAA GCGCACAAG	4200
CAACAGGGAA CGCAGGCGAT GACGTCGTAG ACGGAGAGTT TACGGAAAAG TAAGATGAGT	4260
GTATTGGATG AAGAGTATCT AAAAAATACA CGAAAAGTTT ATAATGATTT TTGTAATCAA	4320
GCTGATAACT ATAGAACATC AAAAGATTTT ATTGATAATA TTCCAATAGA ATATTTAGCT	4380
AGATATAGAG AATTATATTA GCTGAACATG ATAGTTGTAT CAAAAATGAT GAAGCGGTAA	4440
GGAATTTTGT TACCTCAGTA TTGTTGCTCG CATTTGTATC GCGATGGTA CCGTATCTGA	4500
CGAACGTTCA GCTTATAT	4518

(2) INFORMATION FOR SEQ ID NO: 122:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 8145 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 122:

TGCTATTTTC GATTCCCTTG GCGTTTTGA TTGCCTTTGC CTTGCAAGTC CATTGGAAGC	60
CCCTCCATTA TCTGATTAAC ATTTACATCT GGGTTATGCG AGGAACCCCC TTAGTCTTGC	120
AACTGATTTT TATCTATTAT GTGCTCCCAA GTATTGGGAT TCGTTTAGAC CGCCTTCCTG	180
CAGCTATTAT TGCCTTTGTT CTCAACTATG CAGCTTACTT TGCAGAAAT TCCGTGGGG	240
GAATTGACAC TATTCCAAGA GGACAGTATG AGGCCGCCAA GGTCTTGAAG TTTAGCCCTT	300
TTGACAGAGT GCGCTATATT ATCTTGCCCC AAGTGACCAA GATCGTTCTT CCTAGTGTCT	360
TTAATGAAGT TATGAGTTTG GTCAAGGATA CTTCTTTGGT CTATGCTCTC GGAATTTTCA	420
ACCTTATCTT GGCTAGTCGA ACAGCTGCTA ACCGCGATGC TAGTCTAGTT CCTATGTTCT	480
TGGCAGGAGC CATTTATTTG ATTTTGATTG GGATTGTGAC AATTATTTCC AAAAAAGTTG	540
AGAAGAAGTA TAGTTATTAT AGATAGGAGG CTGCCATGTT AGAATTACGA AATATCAATA	600
AAGTCTTTGG AGACAAACAA ATCCTGTCTA ATTTAGTCT AAGTATTCCT GAAAAGCAAA	660
TCCTGGCTAT CGTTGGACCT TCTGGTGGAG GTAAGACAAC TCTTTTACGT ATGCTTGACG	720
GTCTTGAAAC CATTGATTCA GGGCAAATCT TTTATAATGG ACAACCTTTA GAGCTGGATG	780

854

AATTGCAGAA GCGCAATCTA CTGGGATTG TCTTCCAAGA TTTTCAACTA TTTCCTCATC	840
TATCAGTTCT GGAAAATTG ACTTTATCGC CTGTGAAGAC CATGGGAATG AAGCAGGAAG	900
AGGCTGAGAA GAAGGCGAGT GGACTCTTGG AACAGTTAGG ACTAGGAGGA CACGCAGAGG	960
CCTATCCTTT CTCACTATCT GGTGGGCAAA AGCAGCGGGT GGCTTTGGCG CGTGCTATGA	1020
TGATTGACCC AGAAATCATT GGCTACGATG AACCAACTTC TGCCCTGGAT CCAGAATTAC	1080
GTTTGGAAGT GGAGAAGCTA ATCTTGCAAA ATAGGGAAC TGGGATGACC CAGATTGTGG	1140
TTACCCATGA TTTGCAGTTT GCTGAAAATA TCGCAGATGT ATTATTGAAA GTAGAACCTA	1200
AATAGGAGGA AAAATGGATG AAAAAATGGA TGCTTGATT AGTCAGTCTG ATGACTGCTT	1260
TGTTCTTAGT AGCTTGTTGG AAAAATCTA GCGAACTAG TGGAGATAAT TGGTCAAAGT	1320
ACCAGTCTAA CAAGTCTATT ACTATTGGAT TTGATAGTAC TTTTGTCCA ATGGGATTTG	1380
CTCAGAAAGA TGTTCTTAT GCAGGATTTG ATATTGATTT AGCTACAGCT GTTTTTGAAA	1440
AATACGGAAT CACGGTAAAT TGGCAACCGA TTGATTGGGA TTTGAAAGAA GCTGAATTGA	1500
CAAAGGAAC GATTGATCTG ATTTGGAATG GCTATTCCGC TACAGACGAA CGCCGTGAAA	1560
AGGTGGCTTT CAGTAACTCA TATATGAAGA ATGAGCAGGT ATTGGTTACG AAGAAATCAT	1620
CTGGTATCAC GACTGCAAAG GATATGACTG GAAAGACATT AGGAGCTCAA GCTGGTTCAT	1680
CTGGTTATGC GGACTTTGAA GCAAATCCAG AAATTTTGAA GAATATTGTC GCTAATAAGG	1740
AAGCGAATCA ATACCAAACC TTTAATGAAG CCTTGATTGA TTTGAAAAAC GATCGAATTG	1800
ATGGTCTATT GATTGACCGT GTCTATGCAA ACTATTATTT AGAAGCAGAA GGTGTTTTAA	1860
ACGATTATAA TGTCTTTACA GTTGGACTAG AAACAGAAGC TTTTGCGGTT GGAGCCCCGA	1920
AGGAAGATAC AAACCTGGTT AAGAAGATAA ATGAAGCTTT TTCTAGTCTT TACAAGGACG	1980
GCAAGTTCCA AGAAATCAGC CAAAAATGGT TTGGAGAAGA TGTAGCAACC AAAGAAGTAA	2040
AAGAAGGACA GTAAGATAAA ATAGTGGCTG AAACGCGTT TTGATTAGCA AAACGTAGTT	2100
TTTTTTGTAA TCTAGGAAAA CGATAATAGC GATTGAATAT GGATAATTGA ATATGGAATA	2160
GCCCACTGTG ATTTCTAAAA CATTTGTTAA AATTGATTG ACTTCCAAAA TTAAAAATGTT	2220
CTGTAATGAA ATACTGATGT AACTGTTTTA GGAACAATAA AACGCATAAT ATCAAGGTTT	2280
TTGCACCTTA CATTATGCGT TTTTGTGATT TTAAGACTTG TTAGCTGATT TTTTACAATC	2340
CTGCGAAATC TTTGATTCTT TGTGCTGACA TTGAAGAGTC GCAACGGACG TTGATTGTGC	2400
CATCTGTAAT ATGAACAAAA CCTGGTACAG TTGGGATTCC ATAGCGTGAG CGGAATGCTT	2460
GCAAATCATT GAGTTGGCTT GGTCTTCAC TATTGATGAA GTAAATGTGA GCTTTGGTTT	2520
CAGCTACGAC ACCTGACAAT GTACCTGCAA ATTTACGGCA GTAAGGGCAA GTTTTGCAGC	2580

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CTTGATTTTT GGTTCGTAC CTGAAGGGCG AACGGCAATC CATGAACCGT CAGCAAGTGT	2940
GTATTTCAAC ACATCACTTG GAGGAGTTGT CAAGTTTGTA ACAGTACCGT CAGCAACAGT	3000
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AAGAGTAACA GAGATTGTTT TTTCTGCGTA GTAGCCATAT TCTTTATAGA TTTCTTCGAT	3180
ACCGTCAGCA AGTGTCAAAC CACGAGAACG GTAGTAGGCA GCAAGTTCAG CAACTACAAG	3240
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TTCAAATCCC ATCATGTAAG TGTGGTTGTG TTTTCTTCG AATTCTTGA TTTTTCAGC	3360
GATAAATTTG AAACCTGTCA AGACGTTGAA CATAGTTGCG CCGTAGCTTT CAGCAATCTT	3420
CGTTACCAAG TCAGTTGAAA CGATAGATTT GCAGAGAGCG GCATTTTCAG GAAGAGTTCC	3480
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TTGCGCTTCA ACAACTTGAA CAGAGTCAAA TCCTGCTTGG GCAAGAGCAC GACGAGCCAA	3780
CATTTACCA GTACCATGAA GTGGTGTGTA GACAATCTTC ATGTCTTTAC CAAATTCTTC	3840
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TTCGCCGATA ACTTCAATCA AGCCAGAAGC TTTTTCAGTT TCCACATCAG CAACTTCAAC	3960
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CATTTGTCCA CCGTCTTCAC CGTAAACCTT GTAACCGTTA AATGGAGCAG GGTGTGGCT	4080
GGCTGTGACC ATGATACCTG CGAAACAGTT GAGATGACGA ACTGCAAATG ATAGTTCTGG	4140
AGTCGGACGA AGGCTTTCAA ATACGTAAGA TTTGATGCCG TGTTTAGCAA GAACTGCGC	4200
AGATTCAAAG GCAAACCTCAG GTGAGAAGTG ACGGCTATCG TAGGCAATTG CTACACCGCG	4260
TTCTTTCTCG TTTCCACCTT TTGACTCAAT CAAACGAGCC AATCCTTCAG TAGCTTGGCG	4320

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TTTTTAGTTT TAGTAAAACC TTATCTGCTT CGAACATCTC TTCAAACCAG GTCAGATTGA	4620
ATTTTGGGGT TATATGATGT TGAGGCTAGG AAAAATTCAA TTTCAGTAAA AAAAGTAAAGT	4680
CTTCTCATAA CAAAACATTG ATATAGTTAC TTAGTTTAA ACAAGCATAT TATAATAAAG	4740
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TAGCGGACGT CGTTTTGAGC GAACTTCAAT TGTTGCAGGA CAAGTAGACG GAGAGTTTAT	5280
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ATACTAAAAA AAAAAATAGT ACATTAATC GTGTAAATAA AAAAACTATA CACCAGAGCA	5880
ACAAAACTC CATGATCAAT TTGAAGCAGA AGCAACGGAA GATGCTAAAA AACAAGGCGA	5940
TATTGTGTTG AATGTTGACC AGGATTTTAT GAGCATATCT AAGTCTAATA AAAGTGGTTC	6000
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TGTCTTGAAA CAGGTTGATA AAGATACTCC TAATACCCCA ACTTGGCTAA ACTCAGCTGC	6120

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TTCTAAAGCT AAAGATGATG ACAGAGTATA TAAACTACTG AAGACTCTTA TACCAGGAGA	6180
AAATTACCTA TCATGTTAAG GATAATCAGC TAGAAGTAGA AACAGATAAA TACACATATA	6240
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TAAGTGCCGA TGAATATAAT TCTAATCGCC AAACCTTTGA GAGAGAATAC AAATACAAAA	6360
GCAATGCCC TTAATAATGG TTGGGCTAGA TCTGGTCTG AAGAGTTCAA AAAGTTCTCC	6420
CACCTTGCTAG GGGTAGACAA AGGGATTCTG CGAACGAATG TACTGACTGG TAAAAAACTA	6480
TCTGATAAGA TTAGGAAAGA AGTGGGCTCT GGAGATAGCA AACTAGGAAA AGGCGGCTAT	6540
TTCTCTACTG GGGATGTTCT ATTAGGAAAA GATGTTGTTT CTTATACCGT ACAAGTATTT	6600
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CCAATTCTAG CTGACTTTTC AGTCATCCAA GATACTGTGG AACCATCAGC AACCGTTGTT	6720
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GAAGCAGATA CAAATTCTGC AAGTTTAACT GGGAAATATTG TAAGCGAAGG TAGAACAGTG	7080
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AAAGAAGGTA GGCAAGAGAA GTTGGTAGAG TCTGTTATAA AAGCTGATTT AGCGATAGGT	7200
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AAGTTACGAA CCAAAATGTA AAAGAAGATG TTGTTCAACC TGTAACCTTA AGCCGTACAA	7500
AAACTGAGAA CAAGGTCACG GGAGTTGTAA CCTACGGTGA ATGGACAACA GGAACTGGG	7560
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CACAAGAAGT TACGTCAGAC TCTAGTGATA AAGAAATAAC GGTAAGGTAT GACCGTTTAT	7680
CAACACCAGA AAAACCAATC CCACAACCAA ATCCAGAGCA TCCAAGTGTT CCGACACCAA	7740
ACCCAGAACT ACCAAATCAA GAGACTCCAA CACCAGATAA ACCAACTCCA GAACCAGGTA	7800
CTCCAAAAAC TGAAACTCCA GTGAATCCAG ACCCAGAAGT TCCGACTTAT GAGACAGGTA	7860

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AGAGAGAGGA ATTGCCAAAC ACAGGTACAG AAGCTAATGC TACCTTGGCT AGTGCTGGTA	7920
TCATGACCTT GTTAGCTGGT CTAGGATTAG GATTTTTCAG GAAAAAAGAA GATGAAAAAT	7980
AATAGATTTT AGAATCTAGG AACGAGGAAA AGCTCACAGA TGTGGGCTTT TTTCTGGTT	8040
TTGAGAACGA GGTCTTTCGT AAAGAATAAA AACGCTTACA AGTCTGTTGA ACTGGGAAAC	8100
TATGAATCCT ATTTTTCCTAA AAATATTTCC AGAAATCAGT TGCGG	8145

(2) INFORMATION FOR SEQ ID NO: 123:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 8697 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 123:

CGGTACCGGG AACGATACTT AGTCTAATTT TGCACCTTTT CCATGTATGG TAAAGGTTTT	60
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AAGTTTACC CCTAGTACAG GGGATTGATC GGATAGCTGT TATTGATCAG GTCATTGCTT	180
ATCTGCAWAC TCAAGAAGTG ACGATGGTAG TGACACCATT TGAAACGGTC TTGGAAGGGG	240
AGTTTGATGA GCTTATGCGC ATTCTAAAAG AAGCGCTGGA AGTGGCAGGG CAGGAGGCAG	300
ACAATGTCTT TGCCAATGTC AAAATAAATG TAGGAGAGAT TTAAAGTATT GATGAGAAAC	360
TTGAGAAGTA TACTGAGACG ACACATTAGT CTATTGGGCT TTCTCGGAGT ATTGTCAATC	420
TGGCAGTTAG CAGGTTTTCT TAAACTTCTC CCCAAGTTA TCCTGCCGAC ACCTCTTGAA	480
ATTCTCCAGC CCTTTGTTTCG TGACAGAGAA TTTCTCTGGC ACCATAGCTG GGCGACCTTG	540
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ATGGATAGTT TGACTTGGCT CAATGACCTG ATTTACCCTA TGATGGTGGT CATTGAGACC	660
ATTCCGACCA TTGCCATAGC TCCTATCCTG GTCTTGTTGGC TAGGTATAGG GATTTTGCCC	720
AAGATTGTCT TGATTATCTT AACGACAACC TTTCCTCATCA TCGTTAGTAT TTTGGACGGT	780
TTTAGGCATT GCGACAAGGA TATGCTGACC TTGTTTAGTC TGATGCGGGC CAAGCCTTGG	840
CAAATCCTGT GGCATTTTAA AATCCCAGTT AGCCTGCCTT ACTTTTATGC AGGTCTGAGG	900
GTCAGTGTCT CCTACGCCTT TATCACAACG GTGGTATCTG AGTGGTTGGG AGGTTTGGAA	960
GGTCTTGGTG TTTATATGAT TCAGTCTAAA AAAGTGTTC AGTATGATAC CATGTTTGCC	1020
ATTATTATTC TGGTGTGAT TATCAGTCTT TTGGGTATGA AGCTGGTCGA TATCAGTGAA	1080
AAATATGTGA TTAAATGGAA ACCTTCGTAG AATTAGAATG TTTCTGAAAA AGAAAAGAGG	1140

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AACACAATAC ATCAGGAATC ATCTCTCGTA AATCTGATAA TGTAAGCAGT CCAAAAGACT	1560
TGGTTGGTAA GAAATATGGG ACATGGAATG ACCCAACTGA ACTTGCTATG TTGAAAACCT	1620
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TGAGAAAAAT TCGGTATAAT AGTCAAACAA GGTCAAGGTT TAAAGAGAGA GGTGGGTTTG	3000
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AAAATGAAGA AATTGATCTC AAACCAAAGG AATTACTGGT ACTAAAGTGT TTGATTCAGC	7020
ATAAAATCA AGTTTAAAGT AGAGAGCAGA TATTGGAAGA AATTTCAAAA GATGTAGCTG	7080
ATTTACCTTG TGATAGGGTC GTTGATGTCT ATATTCGTAC TCTTCGCAA AAATTAGCTT	7140
TAGATTGTAT CGTGACTGTG AAAAATGTTG GGTATAAGAT TAGCTTATGA TAAAAATCC	7200
TAAATTATTA ACCAAGTCTT TTTTAAGAAG TTTTGCAATT CTAGGTGGTG TTGGTCTAGT	7260
CATTCATATA GCTATTTATT TGACCTTTCC TTTTATTAT ATTCAACTGG AGGGGGAAAA	7320
GTTTAATGAG AGCGCAAGAG TGTTTACGGA GTATTTAAAG ACTAAGACAT CTGATGAAAT	7380
TCCAAGCTTA CTCCAGTCTT ATTCAAAGTC CTTGACCATA TCTGCTCACC TTAAGAGAGA	7440
TATTGTAGAT AAGCGGCTCC CTCTTGTCGA TGACTTGGAT ATTAAAGATG GAAAGCTATC	7500
AAATTATATC GTGATGTTAG ATATGTCTGT TAGTACAGCA GATGGTAAAC AGGTAACCGT	7560
GCAATTTGTT CACGGGGTGG ATGTCTACAA AGAAGCAAAG AATATTTTGC TTTTGTATCT	7620
CCCATATACA TTTTGGTTA CAATTGCTTT TTCCTTGTGTT TTTTCTTATT TTTATACTAA	7680
ACGCTTGCTC AATCCTCTTT TTTACATTTT AGAAGTGAAT AGTAAATGC AAGATTTGGA	7740
TGACAATATT CGTTTTGATG AAAGTAGGAA AGATGAAGTT GGTGAAGTTG GAAAACAGAT	7800
TAATGGTATG TATGAGCACT TGTGAAGGT TATTTATGAG TTGGAAAGTC GTAATGAGCA	7860
AATTGTAAAA TTGCAAAATC AAAAGGTTTC CTTTGTCCGC GGAGCATCAC ATGAGTTGAA	7920
AACCCCTTTA GCCAGTCTTA GAATTATCCT AGAGAATATG CAGCATAATA TTGGAGATTA	7980
CAAAGATCAT CCAAAATATA TTGCAAAGAG TATAAATAAG ATTGACCAGA TGAGCCACTT	8040
ATTAGAAGAA GTACTGGAGT CTTCTAAATT CCAAGAGTGG ACAGAGTGTG GTGAGACCTT	8100
GACTGTTAAG CCAGTTTATG TAGATATTTT ATCACGTTAT CAAGAATTAG CTCATTCAAT	8160
AGGTGTTACA ATTGAAAATC AATTGACAGA TGCTACCAGG GTCGTCATGA GTCTTAGGGC	8220

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ATTGGATAAG GTTTTGACAA ACCTGATTAG TAATGCAATT AAATATTCAG ATAAAAATGG	8280
GCGTGTAATC ATATCCGAGC AAGATGGCTA TCTCTCTATC AAAAATACAT GTGCGCCTCT	8340
AAGTGACCAA GAACTAGAAC ATTTATTTGA TATATTCTAT CATTCTCAA TCGTGACAGA	8400
TAAGGATGAA AGTTCGGTT TGGGTCTTTA CATTGTGAAT AATATTTTAG AAAGCTATCA	8460
AATGGATTAT AGTTTTCTCC CTTATGAACA CGGTATGGAA TTTAAGATTA GCTGTAGAC	8520
AGATTAGTTT TTTATTAAAG TTCATATAGG GTTAACATAA GTGTGTTATT CTTGTGTAG	8580
ATAAAAGAAA GGATACTAAT ATGGTATTAG CGATTATTTT AGTAACATTC TTTATTCGAT	8640
TGATTTTTTT AAAGCGTTCG ATAGAGAATG AGAAACGAAT CCTTAGCAAT GCGGGG	8697

(2) INFORMATION FOR SEQ ID NO: 124:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 4317 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 124:

AACCATACAT ACGGCAAGGC AAAGCTGACG CGGTTTGAAG AGATTTTCGA AGAGTATTAG	60
TTGCCTTTAA AGGCATCCAC CATCGTTTGA AATCTTTCAT TTGAGAGAGT AATCCCTTTG	120
CCCATTTTAG TATGGTCTGG ACTCCAAGCA CGAATATCAA ACTTTGCAGG GGCACCATTA	180
AAAGCTCACAC GGTAAATTC CTTGGTCCAA CCTTTTTCGT TTTCAGAAAG AGTCAACAAG	240
TGCTCTTCGA TTTCAAATGT AAATTCTGCC ATTTCTTCT CCTTTTTCAG TTTTCATTAGT	300
TTATTCGTAA AATCTTGTAG ATTTTAGGAA AATTTTATAT AATATTGATA TAAAAGAAGG	360
GAGGCCAATA TGAGACATAA ATTCCAGCAA GTTCTAAATA AAATACATGA TTTTAAAT	420
GGATATGACC AACCTGACCA GACTGAAACC AACTCCCTTA CAGCCACTAT TGAAGAGGCT	480
ATCCAGAAAC AAACCGCTGT TCACCTTATC TTGTCTGAGA CAAGCTTTAC AGGTGACATC	540
ATCAAATATG ATCAGCAAGG CCAGCAAATT ATCGTGAAAA ATTTTTCCTAA AAATGTGAGC	600
CGGATTATCC GTATAAGCGA TATTCAACGC CTGCGATTG TCCCCTCAAC TGTCCAAACA	660
GCCCCAAAAA ATAGATTTAA GAAAGAGTGA GATGTAGTTG CTTTCATCCA CTCTTTTTC	720
TTAGCGAATT TGTTCAAAAT GTAAATGAAC TGCGATATGA TCTCCATAAC CACTTCTTTC	780
CAAGTCACGT TGTAACGAT AGGAAATGTA GTGTTCTGCA ATGGTAATGT AACCTGCGCC	840
CAATAAACGA TGTTCACCA TAGATTGAAT CATACTGATA GTCGCACGTT CCACCTTGCC	900

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TTCTTGTA	AA	TCCAA	ACTA	CCTTCTTAGT	GACTTGAGCA AGATTTTGAC GCAAATCATC 960
TGTCAA	ACA	TAAACAGTT	GGGCTGCCTT	CAAGATGGCT	TGGTAAATCT TATCTGGATT 1020
AAATTCAGCA	ATTTCGCCAT	TACGTTTGAT	TACTTGCATA	GGTTTCTCCT	TTATTCTTTG 1080
TTTCTTTGA	TTTCTGCCAG	CATTTTTTCT	TCTTCTACTG	TCAGTTGATA	ATGTTCAAGT 1140
AAATCCGGTC	TGCGCTCGTA	GGTTTTCTTT	AAACTCTCGT	ACAATCGCCA	CTGACGAATC 1200
TTTTCATGGT	GGCCACTCAT	CAATACATCT	GGCACGACCA	TGCCTCGATA	ATCATAGGGA 1260
CGTGTGTACT	GAGGATATTC	TAAAAGACCT	GAAGAAAAAC	TATCATCTTG	GTGGCTAGAC 1320
TCCTTGCCAA	TCACTTCTGG	AATCAGGCGA	ACTGTAGCAT	CAATCATGGT	CATAGCTGCC 1380
AATTCAC	CAGTGAGGAC	ATAGTCACCT	AGGGAATCT	CATCTGTAC	CAAGGTCTTA 1440
ATGCGCTCAT	CATAACCTC	ATAGTGCCCA	CAGATAAAGA	TTAGCTCTTC	CTCTTGAGCC 1500
AAATCTTCAG	CATAAGCCTG	ATCAAAGTGC	TTTCCAGCAG	GATCAAGGAG	AATAACGCGC 1560
GGATTTTTCT	TTTCAATAGC	ATCAAAGGAA	TCGAAAATAG	GTTGTGCTCT	GAGCAACATG 1620
CCCTGACCGC	CTCCGTAGGG	CTCATCATCT	ACATGACGGG	CCTTTTCAGC	ATTTTCTCGA 1680
AAATTATGAT	ACTGGATATC	CAAGAGCCCT	TTTTCTCGAG	CCTTTCCAAC	GATTGAGTGC 1740
TCCAGTGGAG	AAAACATCTC	TGGAAAGAGG	GTTAAATAT	CAATCTTCAT	CGTCTAACCC 1800
TTCTAAGATT	TCCACATCGA	CCCGTTTACT	TGGAATATCA	ACATTGAGAA	CCACTGGTGG 1860
GATATAAGGT	AAAAGCAAAT	CACGTTTGCC	TTTTCGTTTG	ACCACCCAGA	CATCATTAGC 1920
ACCTGGTTGC	AGGATTTCCCT	TGATGGTTCC	AACCAAGCTA	TCACCCCTCAT	AGACTTCCAA 1980
ACCGATAATC	TCGTGATAGT	AAAATTCACC	ATCGTCTAGG	TCATTCAAAT	CTTCCTCAGC 2040
GACCTTGAGA	CTGTATCCCT	TGTACTTTTC	GATAGTATTG	ATATGGTACA	TATCTTTGAA 2100
TTTAATAATG	TCAAAGTTCT	TCTGTTTACG	GTGGCTAGCG	ATGGTCACTG	TTTGGACAAA 2160
CTGATCTTTT	TCATCAAACA	AAACCAGCTC	AGCTCCTTTT	TTAAACCGTT	CTTCTGCAAA 2220
ATCCGTCACA	GACAAGACTC	GCATCTCCCC	CTGTAATCCC	TGCGTATTAA	CGATTTTCCC 2280
AACATTAAAG	TAGTTCATCT	TGTCTCCTGT	AATCTCCTTT	TTTCCATCTT	ATTCTAACAA 2340
TTCTCGAATA	ATAGCCGCAA	TTTTTTCCGA	TTCTGACCAT	TGTAAATAAT	GGTGATTCCC 2400
TCCTAAAATG	AGTTTAGTAT	TGGAAGTCCA	ATATTCTGAT	TCTCTGTACT	CTTTTTCTCT 2460
ATAAGGCTGA	CAAAAAACAA	ATACAGGAAT	ATGAGCTTCT	ATAGATACAT	CCTCAAAATC 2520
TTCTCAGTA	ATCTCTCCAG	ATATCTGAAA	TTCTGGATCT	TGATTTTCCA	ACTCTAAGCC 2580
TTTTTCTTGC	ATTAATTCCC	AGATTTTTTT	ATTCGTTTCA	GGACTAAATG	TTGCTTGAGT 2640
TAAGTTCTTA	AAATAAAGTT	CAGGACCACA	CTCGTCAATC	AGCCTCATCT	GCTCTTCCAT 2700

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TTCTGGATAA GGATTTTCTG AAAAATCAGC AAACATGACT TTTTtagTTG TCGGTTCaAT	2760
TGCTACTAAA GTCTGACGCT TAATTGGTTT CTCGAGTAAT TTGCAAGCTA AAATCCACT	2820
CCAACTATGT GCACAAAGTA TATATTCAGA AATTCCTAAT TCTTCAAGTA CTTcATAAAC	2880
CGCATCTGCA AGATTATCTA GATTTTTTCC AGCTTGGTCA TGAATCGGAC TCCTACCTGT	2940
GTTTCGAAAA TCAATTGTCA AATAACCAAT TGTAGGAGGA GGTTTTTCAA GTATAAGTGA	3000
AAAATTTTCA TAACTTGGTA GCAAACCTGC TCCGTTTAAA CAAACTAGCA CTTTCTTTTG	3060
CTTTTGATAA GTAACAGAGA GGCTACCAAT TTCTGTAGAT ACTTCAAACC TCTTCATAAA	3120
GAAATCCACT GATTCTATAT AATGAATTAT TAAAAATCCT TATCCTTTAT TTTATCACGT	3180
TCCAAGGATT TTCTCAAGTT GGAGGAAGGG GACAATATCT CTACTTTCCC TTCAATAATC	3240
CTTCCAAATT ATGTTTATGT TGTAATTAA TGGCTGCGGT TTTGTCTTTC TCAAAGACAG	3300
TCTTGGTAAG GTCAATATGA TTAATAGCTA CGATTGCGAC GGTGTAGTAA ATGATATCAG	3360
CCAGTTCTCT GGCAAGTTCC TCGTTCGAAT CCTATCCCTT CTTTTCGACC AGAGCGCCTA	3420
TTCAAAACCT CGACTACTTC TCCGACTTCC TCCACTAACT TCATAAAGAG ACCTTCATCA	3480
GTCCGAGACT GCTGTTAATG TTCGATTAAG TAGTCTTGA ATTGCCTAAA CGTTCAATCT	3540
TTTATAGTAT ATTGAACTA GAATAGTACA CCTTTACTTC TAAAACATTG TTAGAAATCG	3600
ATTTGACTGT CCTGATCGAT TTGTCCTGTT CTGTGTTTCT TTTACTATAT CTTCTATTCC	3660
ACACAAAAAA GCGAGACATC CGTCCCGCCC TTCTTATTTT TCGTCAATAA CGATTCTTAC	3720
TTTTTTGTAT TCAGTTGGGA CAGAGTAGAC AATCGTTCTT ATCGCAGAAA TAGTGCAGAC	3780
CTTACGACCG ATTACACGAC CCACATCGCT TTGATCAAGA TTCAAATGAT ATTCCAAAAA	3840
TTCTGGTGTA TCCTCAATCT TGATAGTTAA GGCATCTGGT TGTGAAATTA AGGGTTTCAC	3900
AATCGCAATA ATGAGATTTT CAATCGTATC CATCTGTCAA CCTACTTTAA ACTTATTTTG	3960
AAAATTTAGA ATCGTGGAAT TTTTCAATA CGCCTTCTTT TGAAAGGATG TTACGTACTG	4020
TGTCTGAAGG TTGAGCTCCA TTAGCCAACC ATGCAAGAAC GCGGTCTTCT TTCAAAGTTA	4080
CTTGGTTTTT AGCAACAAGT GGGTTGTAAG TTCCAAGTGT TTCGATGAAA CGTCCGTCAC	4140
GTGGTGAACG TGAATCTGCT ACGTTGATAC GGTAGAAAGG TTTTCTTCTA GAACCCATAC	4200
GAGTCAAACG GATTTTAACT GCCATTTTTA AAGTCTCATT TCTTTAATTT TTTATTTCCG	4260
TGAAATAGCT GAGCTATTTA GCACATGTTT TATTATAGCA GATTTCTGGC ATGTGTC	4317

(2) INFORMATION FOR SEQ ID NO: 125:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 4881 base pairs

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(B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 125:

AATTTATTTG ACTGGAAATT GTAGAGGGTT CTCGAAATTT CTTGAATGGT TAAAATAAGG	60
ACAAGAGAAA ACATGGATAT CTATATCCTT GTGCCAAAAA AACCCTGCC CTCCCAGAC	120
CAACCTGAGG AAAGCAGTGA TTCTTATTTT AGGAGTTAGG AATGAATACA CGAAATCAAT	180
TTAGCTGATT ATTTTTTGTT TTTCAAGAAT TCATCGTATT GTTTTTGCAT TTCGTTCAAT	240
ACTTTTTCGT AGGCACCTTC AGATTTCAAT TTTTCCATCA ATTCTGGAAT CGCTTTATCT	300
GGGTCTACAG TACCAGTGTT GATAGCTGTA TCAAATTGTT GCATTGTGTT AGCAATAGCT	360
GAGATTTTCA AGTTTACATT GTCAGTATTG AAGATAAATC CAAGCGCTGG AGATTTCTTTA	420
GCTTCTGCCA ATTCTTTCTT AGAATTTTCG ATTTGTTGGT CTGTAACGTT TTCGTTGATG	480
TAAAGGATCC AGTTGTTACC AGTGTTCAT CCACCCATGT GAGTGTTCCT TTTGTAGCCA	540
TCAAGAACGC GAACACGGTT TTCTTTACCT TCAATTTTTT CCCAGTTCTT GCCTTCTGGA	600
CCGTAAACAA GACCGTTCAA GAGTTCTGGG TTCGTATTCA AGAGGTTCAA GATTTCCATT	660
GATTTTCTTT TGTCTTAGA GTTGTGTTGAG ATGACAAAGT TAGCAACTTG TGTTGTTTGG	720
TTTTTCTTGA TGAAGTTAGT AATTGGTTTG ATTTGGATAT CTTTGTGGC AACACGTGAA	780
AGCAAGCTGT TACCGTAGTC AGCTGGTCCT ACTGTTTCTT CACGAACGAA CCAAGTATCT	840
TGTTGAAGGT CAAAGGAAGT ATCGCTTGTT GCGACGTCTT TTGGAATGTA GCCAGCTTCA	900
TAGAATTTGT GAAGAGTCTT CAAGTGTCTT TTGAAACGAG GCACTTCGTA ACGGTTTACA	960
ACTTTAGTAG TATCGCCTTC AAGGTCGATA ACGAATGGAA GACCGTTTGC TACTGGGTAG	1020
TCAAAATTAT CAGATGGGAT GAAAACTTTA CCAATAGCAA ATGGTACTAC GTCTGGAGCT	1080
TTTTCTTTGA TTTGTTTCAA GACTGGCTCA AGAGTTTCGT AAGAAGTAAC ACCTGAAATA	1140
TCGATACCAT ATTTAGCAAG GAGAGTTCCG TTGAAGGCAA AGTTTGTAGA TGATGCAACG	1200
TTGGCTGCAA CTGGAACAGC GTAAATCTTA CCATTTACAG TATTACCTTT GATGTAAGCT	1260
GGGTCAAGTG CTTTGTAAG GTCTTTACCT TCTTTTGTGT ACAATTCTGT CAAGTCAGCG	1320
TAAGCACCTT TTTGAGCATT TACAATATAG TTATCTGCAA AGGCAATATC ATAGTTTCA	1380
CCAGATGATG TGATAACTGA CATTTTCTTA CCATAGTCAC CCCAGCCAAG GTATTGGATA	1440
TCCAATTGG CACCAACTTT TTCTTCAATG ATTTTGTGG CATTTGCTAA CAATTCATCC	1500
AAGTTGCTCT GTTTGTCACC GATTTGGTAC ATTTTGATAA CAGGTTTGTC ACCTGAATCA	1560

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GCAGCTTTTT TGCTGTTACC TGTCAAATTT CCACAAGCAG CAAGACCTGC AGCCAGAGCG	1620
ACTACACTAG CAGATGCAAA AGCATATTTT TTCCAGTTTT TCATGATAAA AACTCCTTTT	1680
TTTATTTTTA AACTTATAAA CAATGTAATG ATCTTATACT CAATAAAAAT CAAAGAGCAA	1740
ACTAGAAAAC TAGCCGCAGG CTGCTCAAAG CACTGCTTTG AGGTTGTAGA TAAGACTGAC	1800
GAAGTCAGTT ACATATATCT ACGGCAAGGC GACGTGACG CGGTTTGAAT TTGATTTTCG	1860
AAGAGTATTA ACTTCACACA AGGGAAGTTG GGAACGAGA AATGTTATTT CTCAATAAGC	1920
ACTATTCTTT CACACCACCG ATAGTCAAAC CTTTTACAAA GTAGCGTTGG AAAAATGGAT	1980
ACAAAATCGC GATTGGAAGG GTTGCAACCA CAACCATGGC CATACGACCT GTTCTTTTCG	2040
GTAGAGCAAC TCCCAGTTGA CCAATCAAGC CGACCGCTTT GGCAATGTAG TCCATATTTT	2100
GTTGGATTG CATGAGCAAA TATTGCAATG GATACAAAGT GTCACTCTTG ATGTAAAGAA	2160
GGGCGTTGAA CCAGTCATTC CAGAAACCAA GAGCTGTTAA GAGCGTGATG GTTGCGATAC	2220
CTGGTAGTGA CAATGGCAAA CAGATTGGA AGAAAATCCG GGCTCACTG GCACCATCGA	2280
TACGAGCCGA TTCTAGAATG GCTTCTGGAA TGGTCTTCTT GAAGAAGGAA CGCATCAAGA	2340
TGATGTTAAA TGGTGAGAGA AGCATTGGAA CAATCAAGGC CCAAACAGTG TCACCAAGCT	2400
GAAGTACAG GGTCAACATG ATATAACCTG GTACCAAACC AGCGTTGAAC AACATACTGA	2460
GAAGGACGAA GATGGTAAAG AATCTGCGAT ACTTAAAGGT TGTCCGTGAA ATAGCGTAGG	2520
CATAGGTTGT TGTGATAAAG ACATTGTGCA ATGTCCCAAC TACGGTTACA AAGACAGAGA	2580
TGAAGAGGGC TTGTAGGATT TTATCCTTAA ACTGTGCCAA AAACTCAAAA CCGTCTAAGC	2640
CAAATTGGGA TGGGAAGAAG CTATAGCCGT ATTGGAGGAG GCTTTTCTCG TCTGTCACTG	2700
AAATAATGAT AACGAATACA AAAGGTAGGA TACAAGAGAG GGCAATCAAA CCCGAAATGA	2760
TACTGAAGAA GATATCTGCT TTCTTACTGA AGGAGTGAAT GCCGACATTA TCAATTTTTT	2820
CTTTTTTAAT TTTCTTTTTT GCCATATTCT CCTCCTTTCT AGAACAAAGC TGAGTTTGGG	2880
TCGACTCGTC TTGCAAGCAA GTTTGATAGG ATAACCAGAA TCAAACCAAC AACGGATTGG	2940
TAAAGACCGG CTGCTGCAGC CATACCGATA TCTGCTGTCT GAGTCAAACC ATTAAAGACA	3000
TATACGTCCA AAACGTTGGT TACATTGTAA AGCTGACCAG CATTGTGTGG GATTTGATAG	3060
AAGAGACCGA AGTCTGCGCG GAAGATATTT CCGACTGCAA GGATGGTCAA TACAGTTACA	3120
AGCGGAGTCA ACTGAGGAAT GGTACGTTG CGAATACGTT GCCACTTGCT AGCTCCGTCC	3180
ACTGTCGCTG CTTCGTAGTA GGTGGATCA ATTCCCATGA TCGTCGCATA GTACATGACA	3240
CTGCTATATC CAAAGCCTTT CCAAATACCT AGGAAAAGTA GGAGATAGGG CCAGATGCCC	3300

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AGGTCAGCGT AGAAATTGAC TTCTTTGAGA CCAAGACTTT CCAATAGATG ATTGAACACC	3360
CCTTTATCAA TATTTAGGAA GGCATCTGTA AAGAACTGA TGATAACCCA AGACAAGAAG	3420
TAAGGGAACA ACATAGAAGT TTGAAAAATC TTCACCATTC TCTTAGAACG GAGCTCGCTG	3480
AGGATAATGG CAATCCCTAC AGATACAAC TAAACCTAGAA AGATAAAGCC AAGATTGTAG	3540
AGGACAGTAT TTCGTGTGAT AATAAAGGCG TCTCTTGAAC TAAATAAGAA TCTAAAATTA	3600
TCGAGTCCGA CCCATTTACT ATTTATGATA CTATCTATGA AACCATTACT GGTGATGTGG	3660
TAGTCTTTGA AGGCAACCAC GTTCCCAAAT ACTGGAATGT AAAAGAATAG AATCAACCAG	3720
AGTGCCCTCG GCAAAACCAT CAAGAGAAAG ATCCAGTTGT CTCTCAATGT TTTTGAAAAC	3780
TTTTTCATAA TTTCTCCCT TTTTATTTTG ATATCCATCT AAAAATCTTT TTTTAGACTT	3840
TTGATAACGA TTACATTATT AGTATACTCC TATTTGCAGG TTAGGTAAA CTCCTAATTA	3900
TAGAAAAAAC TCCACAAATT ATGTAGCAGA TTTAAACTTT TATCACCCT ATCAAACAAA	3960
TGTCCTAAAT CAATTGTTTA TTTTATCTCT ATTAGCCCAG TGATGGCGTC ACTCTGTTAT	4020
AAGCATCCAA CAACGGGGTA TACTGAAAA TCTCCAGACT AGGGAAC TCA GCGATAGTTC	4080
CTAATCTGGA GATTTTAAAT ATGTTATTAG GCGTTTGCTT TCAACTTAGC AATAACCTCT	4140
TTAAGATTAT CAATCAACTC TGCTGCAGTA TGCTCAGAGC CTTTTTCATC TGCCAAGAAC	4200
AAAAGTCTT TTTGAAGTTC TTTTGAAGAG TTTTCAAGGA CATCCTTATC TACTGTTTCA	4260
AGGTTTGAGT CTTTAAGAAG TTTACTTAAT TCCTTGGCTA ATTTCTTGAG TTTGATTGTC	4320
AGACTCATCT TCTCTGCTG TTTCTTTGCC CGCTGTTTGT CCTCCATCCT TAGTTGCTGA	4380
CTGGCTTTCC TTAATGGACT CTAGGGAAGC AATGGCATCT TTGACTGTTT GCAAGATATC	4440
ACGTAAACCT TGCTCTGTCA AACTATCATC TGCAAAAGCT TTATTAGCCT CTGCCAAAAC	4500
CAGACGTGCT GAATCTGTGG TAGGATTCGA TACACCTGTC AATGATCTCA AAAGATTTTC	4560
TAAGGTTTGA GTCTGCTTAC TAATACTAGA CTAAATCAA AAAGTATTAT ATAACAGTGA	4620
TATGAAATCA ACTAAAGAAG AAATCCAAAC CATCAAAACA CTTTAAAAG ACTCTCGTAC	4680
AGCTAAATAT CATAAACGCC TTCAAATCGT TCTATTTTGT CTGATGGGCA AATCTTATAA	4740
AGAGATTATA GAACTTTTAT AGTAGTTTGA AATAAGATGT GAACATCTCT ATCAGGAAAG	4800
TCAAATTAAT TTATAGAAAT ATTTTAGCAG CCAAGGTGTA CTGTTATAGA TTCAATACAC	4860
TATACTTGGT GGTTAGCTC G	4881

(2) INFORMATION FOR SEQ ID NO: 126:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 13121 base pairs
 (B) TYPE: nucleic acid

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(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 126:

AGGATCCCCG GAAAAGGAGA CTAAAAATGA AGAAAAAATT TCTAGCATTT TTGCTAATTT	60
TATTCCCAAT TTTCTCATTA GGTATTGCCA AAGCAGAAAC GATTAAGATT GTTCTGATA	120
CCGCCTATGC ACCTTTTGAG TTAAAGATT CAGATCAAAC TTATAAAGGA ATTGATGTTG	180
ACATTATTAA CAAAGTCGCT GAGATTAAAG GCTGGAACAT TCAGATGTCC TATCCTGGAT	240
TTGACGCAGC AGTCAATGCG GTTCAAGCTG GGCAAGCCGA CGCTATCATG GCAGGGATGA	300
CAAAGACTAA AGAACGTGAA AAAGTCTTCA CCATGTCTGA TACTTACTAT GATACAAAAG	360
TTGTCATGTC TACTACAAAG TCACACAAAA TTAGCAAGTA CGACCAATTA ACTGGCAAAA	420
CCGTTGGTGT TAAAAACGGA ACTGCCGCTC AACGTTTCCT TGAAACAATC AAAGATAAAT	480
ACGGCTTTAC TATTAACA TTTGACACTG GTGATTAAAT GAACAACAGC TTGAGTGCTG	540
GTGCCATCGA TGCCATGATG GATGACAAAC CTGTTATCGA ATATGCCATT AACCAAGGTC	600
AAGACCTCCA TATTGAAATG GATGGTGAAG CTGTAGGAAG TTTTGCTTTC GGTGTGAAAA	660
AAGGAAGTAA ATACGAGCAC CTGGTTACTG AATTAAACCA AGCCTTGTCT GAAATGAAAA	720
AAGATGGTAG TCTTGATAAA ATTATCAAGA AATGGACTGC TTCATCATCT TCAGCAGTGC	780
CAACTACAAC TACTCTCGCA GGATTAAAAG CTATTCCTGT TAAGGCTAAA TATATCATTG	840
CCAGCGATTC TTCTTTTGCC CCTTTTGTTT TCCAAAATTC AAGCAACCAA TACACTGGTA	900
TTGATATGGA ATTGATTAAAG GCAATCGCTA AAGACCAAGG TTTTGAAATT GAAATCACCA	960
ACCCTGGTTT TGATGCTGCT ATCAGTGCTG TCCAAGCTGG TCAAGCCGAT GGTATCATCG	1020
CTGGTATGTC TGTCACAGAT GCTCGTAAGG CAACTTTTGA CTTCACAGAA TCATACTACA	1080
CTGCTAATAC CATTCTGGT GTCAAAGAAT CAAGCAATAT TGCTTCTTAT GAAGATCTAA	1140
AAGGAAAGAC AGTCGGTGTT AAAAACGGAA CTGCTTCTCA AACCTTCCTA ACAGAAAATC	1200
AAAGCAAATA CGGCTACAAA ATCAAAACCT TTGCTGATGG TTCTTCAATG TATGACAGTT	1260
TAAACACTGG TGCCATTGAT GCCGTTATGG ATGATGAACC TGTCTCAAA TATTCTATCA	1320
GCCAAGGTCA AAAATTGAAA ACTCCAATCT CTGGAACCTC AATCGGTGAA ACAGCCTTTG	1380
CCGTTAAAAA AGGAGCAAAAT CCAGAACTGA TTGAAATGTT CAACAACGGA CTTGCAAACC	1440
TTAAAGCAAA CGGTGAATTC CAAAAGATTC TTGACAAATA CCTAGCTAGC GAATCTTCAA	1500
CTGCTTCAAC AAGTACTGTT GACGAAACAA CGCTCTGGGG CTGCTTCAA AACAACTACA	1560

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AACAACCTCCT TAGCGGTCTT GGTATCACTC TTGCTCTAGC TCTTATCTCA TTTGCTATTG	1620
CCATTGTTCAT CGGAATTATC TTCGGTATGT TTAGCGTTAG CCCATACAAA TCTCTTCGCG	1680
TCATCTCTGA GATTTTCGTT GACGTTATTC GTGGTATTCC ATTGATGATT CTTGCAGCCT	1740
TCATCTTCTG GCGAATTCCA AACTTCATCG AGTCTATCAC AGGCCAACAA AGCCCAATTA	1800
ACGACTTTGT AGCTGGAACC ATTGCCCTCT CACTCAATGC GGCTGCTTAT ATCGCTGAAA	1860
TCGTTTCGTGG TGGTATTCAG GCCGTTCCAG TTGGCCAAAT GGAAGCCAGC CGAAGCTTGG	1920
GTATCTCTTA TGGAAAAACC ATGCGTAAGA TTATCTTGCC ACAAGCAACT AAATTGATGT	1980
TGCCAAACTT TGTC AACCAA TTCGTTATCG CTCTTAAAGA TACAACTATC GTATCTGCTA	2040
TCGGTTTGGT TGAACCTCTC CAAACTGGTA AGATTATCAT TGCTCGTAAC TACCAAAGTT	2100
TCAAGATGTA TGCAATCCTT GCTATCTTCT ATCTTGTAAT TATCACACTT TTGACTAGAC	2160
TAGCGAAACG CTTAGAAAAG AGGATTCGTT AATGGCAAAA TTAATAATTG ATGTAAATGA	2220
TTTACACAAG CACTATGGAA AAAATGAAGT CCTAAAAGGA ATTACGACTA AGTTCATGA	2280
AGGAGATGTT GTTTGTATCA TCGGTCCTTC AGGTTCTGGT AAGTCAACTT TCCTCCGTAG	2340
CCTCAATCTT TTAGAAGAAG TCACTAGCGG TCACATCACT GTGAACGGCT ATGATTTAAC	2400
TGAAAAACA ACCAATGTTG ACCACGTCCG TGAAAATATC GGCATGGTAT TCCAACACTT	2460
CAACCTCTTC CCTCATATGT CTGTATTGGA CAACATCACC TTTGCTCCTA TTGAGCACAA	2520
GTTGATGACT AAGGAAGAAG CTGAGGAATT GGAATGGAG TTGCTTGAAA AGGTTGGACT	2580
AGCAGATAAA GCTAATGCCA ATCCAGATAG CCTATCAGGT GGTCAAAAAC AACGTGTGGC	2640
CATCGCTCGT GGCCTAGCAA TGAATCCAGA CATCATGCTC TTCGATGAAC CAACTTCTGC	2700
CCTTGACCCT GAGATGGTTG GAGACGTACT TAACGTTATG AAGGAATTGG CTGAGCAAGG	2760
CATGACCATG ATTATCGTAA CCCATGAGAT GGGATTTGCT CGTCAGGTTG CCAACCGCGT	2820
TATCTTTACT GCAGATGGCG AGTTCCTTGA AGACGGAACA CCTGACCAA TCTTTGATAA	2880
CCCACAACAC CCTCGTCTGA AAGAGTTCTT AGATAAGGTC TTAAACGTCT AAACCAAAC	2940
TGTAAGGATT TCCTTGCACT TTTTCTACCT CGTATTGGAA TTTTGTATTT TTCGGAAAA	3000
TATGTTAGAA TTAAGTTTAT GAAATGAGGT TTCCTCATAC CTAGCAAGAC TAGGAATAAA	3060
AATAGAAATT AGGTAGCTAG ATGTCATCTA AGGTTATTGT TACAATTTTC GGTGCGAGTG	3120
GAGACCTGGC TAAACGCAAG CTCTACCCTT CCCTTTTGTAG ACTATATCAA TCCGGCAATC	3180
TTTCCAAGCA CTTTGCCGTT ATTGGAAGT CCCGTAGACC TTGGAGTAAG GAATATTTTG	3240
AATCTGTAGT TGTCGAGTCC ATCCTTGATT TGGCAGATAG TACCGAGCAA GCCCAAGAAT	3300
TTGCTAGCCA CTTCTACTAT CAAAGCCATG ATGTCAATGA TTCGGAACAT TATATTGCTT	3360

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TGCGTCAATT ACAAGCTGAG CTTAATGAAA AATACCAAGC TGAACACAAT AAGCTCTTCT	3420
TCTTGCTCTAT GGCACCTCAG TTCTTTGGAA CCATTGCCAA ACACCTCAAA TCTGAAAACA	3480
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CAACTGCAAG CAAGTTGAAT GACGAACTCC TAGCAACATT TGACGAAGAA CAAATTTTCC	3600
GTATCGACCA TTATCTTGGT AAGGAAATGA TCCAAAGCAT CTTTGCAGTT CGCTTTGCAA	3660
ACTTGATTTT TGAAAACGTT TGGACAAGG ATTTTATCGA CAATGTTCAA ATTACCTTTG	3720
CGGAGCGCTT GGGTGTAGAA GAACGTGGTG GCTACTATGA CCAATCCGGT GCCCTCCGTG	3780
ACATGGTCCA AAACCACACT CTACAACCTC TTTCGCTCCT CGCCATGGAC AAACCAGCAA	3840
GCTTCACAAA AGACGAGATT CGTGCTGAAA AGATTAAGGT CTTTAAAAAC CTCTATCATC	3900
CAACTGATGA AGAACTCAAA GAACACTTTA TCCGTGGGCA ATACCGCTCT GGTAAGATTG	3960
ATGGCATGAA ATACATCTCT TATCGTAGCG AGCCAAATGT GAATCCAGAA TCAACAACCTG	4020
AAACCTTTAC ATCTGGTGCC TTCTTTGTAG ACAGCGATCG ATTCCGTGGT GTTCCTTTCT	4080
TTTTCCGTAC AGGTAAACGA CTGACTGAAA AAGGAACTCA TGTCAACATC GTCTTTAAAC	4140
AAATGGATTC TATCTTTGGA GAACCACTTG CTCCAAATAT TTTGACCATC TATATTCAAC	4200
CAACAGAAGG CTTCTCTCTT AGCCTAAATG GGAAGCAAGT AGGAGAAGAA TTAACTTGG	4260
CTCCTAACTC ACTTGATTAC CGTACAGATG CGACTGCAAC TGGTGCTTCT CCAGAACCAT	4320
ACGAAAAATT GATTTATGAT GTCCTAAATA ACAACTCAAC TAACTTTAGC CACTGGGATG	4380
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CCCCACTTCA TGAATAAAA GCTGGAAGCA TGGGACCTCA AGCCAGCTTT GACCTACTTG	4500
AAAAATTCGG TGCCAAATGG ACTTGGCAAC CAGATATCAC CTATCGTCAA GATGGTCGCT	4560
TAGAATAAAA AAATTTCTCT CAAGTTTATG CcTTGCAGGA TTTTGTCTTC TGATTAGATT	4620
AAACCTTCCA AGAGACCTTT CATAAAGTTT TCTGAGTTAA ACTCTCCAAT ATCATCGATT	4680
TTTTCAACAA AACCAATCAA TTTTACAGGA ATATTGAGTT CTTACGAAT GGCTAGAACC	4740
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TCAGCCATAA GGTATCTCTT ATTTTGCAGA CGACCAGCAG TATCAATCAT GAGAATATCG	4980
ATACCTTCAG TCACGGCAG TTCCATACCA TCAAAGACCA CGCTGGCTGG ATCAGCTTTT	5040
TCAGGTCCAG TTACTACTGG AACATCTACT CGTCGGCCCC ATTCAGCTAG CTGAGCTACT	5100

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GCACCCGCAC GGAAGGTATC TGCTGCAACC AGCATGACCT TCTTACCAGC TTGTTTGTAG	5160
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ATAACTGTCA AGTTATCTTG GAAGTGGATG CTTTCATCGT AGCTACCATC CTTTTCATAA	5280
AGCTCAACCA ATTTCTCAAT GATGACACGA CGAAGTACAT CAGGTTTCTT GGCATTTTCA	5340
AGCTTGGCTT CGTAACGTAG TTCCTCCGTT AAGTTAGAAG CGACTTGGAC ACCAACATCA	5400
CTCATAATCA GCAGTTCTTC CAGTTCCTCG AAAAATCTT CGTCAACAGA GCGGAACTTA	5460
GCAAAGAAGG CATTCAAGCG GGCACCGAAA CCTGTGCGAG TTTTCTTAAG ACTGCGGTCA	5520
TATTTTCTCT GAACAGTTTC TTCTGTTTGA GGAGCTTCTG GTTCAAGCAC TTCAGAATTA	5580
TTTCTTCTCA CAGTTCCTTC GTGCTCAAGC TTCTCTTCCT CTGGTAATTC TTCTGAGTTT	5640
GGTAATCTCT CTATTTCTTC TTGAGAAACC CCTACAGCTG GCTCTGAATC CTGACTTTCT	5700
TCAACTGTGT CTTGGATTTC CTCTTCTTGG AACACAGCTT GTTCAACAAT TTCAACCTCT	5760
GCTTCTTCTT GAGAACTTC CTCAACTTCT GTGAAGGTAG GATCAACATC TTCAGACAAA	5820
TCAAGATTTT CCAGAGCTTC TTTTACAAC TCTTCGATTT TAGGTTCTTC TTTTTCCTCG	5880
AATAGACGGT CAAACAATCC CATATCTTAG TTCTCCTTTA GCACATATTC TTCGATAGCC	5940
CAGGCGACAG CTTCTCATC GTTGGTCATC GCGGTCAC TAATTTGCGGC TGCCTTTACT	6000
TCAGGAACAG CGTTTTCAT AGCAACACCA AGACCTGCCC ATTCAATCAT AGAGAGGTCA	6060
TTGGCCTCGT CACCACAAGC CATCACTTGA CTTTGGTCGA TTCCAAGATG GCTGATTAGT	6120
TTTGCCAAAC CTGTTGCTTT ATGAACATTC TTTGGTGACC ATTCTAGCAA CATTTCACGT	6180
GATTTAAAGA TTTCATATTG GTCAAACAAT TCTGGAGAAA TCTTCTGAAT GGCTGCATCC	6240
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TCAAAGTCCA CTGGAACAAA GGTCAAAGCT GGATTGAATT TGGCATAAAG ACTTTCTTGG	6360
TCCGATTGGA TTTGATAAAC TGTTCCTTCT GAGATGGCAT CAAGAGGCAG TGATAATTTT	6420
TCTGTTTCTT CATACAAACG TGCCACATCA TCATATGAAA AGACTGTTTT ATCAAGGATT	6480
TCTCTGTAT TTTTCTGAAC TAATCCACCA TTAAGAGTAA TGGTATACTC ATCTTCTTGA	6540
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AATACGACCT TGATACCACG ATCAGCGCA gCTTGCAAGG TTTCTTGGT ACGATCCGTC	6660
AGCCTTTTAT CAGTAGTCAG CAAGGTCCCG TCCAAGTCCA ATGCAATCAA TTTTATATCT	6720
GCCATTATAA GCCCTCCATA TAAGCTATAA CCGACCGTTC CTTATGGTGA CCAATCACAG	6780
TCTTTGCTAA TTCTAAAATT TCAGGTCGTG CATTTTCAGG AGCTACAGGA TGTCCACAA	6840
CCTGCATCAT ATGTAAGTCA TTAAGATTGT CTCCAAAAGC CATGACCTGA TCCATTGTGA	6900

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TACCAAGTTT TTAACTAAT TCAACAATGG CCACTCCCTT ATCGACATAG TCCAGAACAA	6960
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AAGCCTCCCC ATCTTCCAGC GTTTCTTCTG TGAAGTTGGT TGTAAATTG AAAATGTCAT	7080
CTGTGATATC TTCCAACTC GCTACTTTTT GGATATTTTC ATTATAGTGC TGACTCACTT	7140
TCAAATAGGT CTCATCAACC GTATCTAGAA CATATGAACC CTTCTTACCC GTCAAGAGCA	7200
GTTTATTGAT ATCTACATAA GGTGAAGTTT TCAGCTTTTC AAAAGTTGCC AGATAAAAGT	7260
CACGAGACAT AGTCGCTTCA TACAAGTCCT GACCTTGATA CTCTACCAA CTGCCATTTT	7320
CCCGCATGAA AATAATGTCA TCACGAACAC CAGCAAATAA TTTTCTAGA GACAGAAATC	7380
CCCAGCCGA AGCTACCGCA AAGTAAATCC CTTTTCCCTT GTAGGAAACC AAGAGAGACT	7440
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CTTTGAAACA CCCGATTCTT GCATGGTCAC TCCATAGATG GAATCAGCCG CTGCCATGGT	7620
TCCCTTACGG TGGGTACGA CGATGAACTG GCTGTCCTTG TCAAAGCGGT TGAGGTAATC	7680
CCCAAAACGT TTAACATTGG CTTTATCCAG CGCAGCTTCC ACCTCATCCA AGATAACAA	7740
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AATAGCGTCT AAATTGACAG GACCCAGTGA GCGTATAGCC TTCTCTAAAT CCTTAACTTC	8160
TTGCTCTGCC AGATTGAGAT TTTCCAACTC ATGCGCCTTT TCTAAAGCTT CTGTGTAGCT	8220
GATCTGGTAC TGGTCTGTTA ATTGACTTTG TAGATGGCGC AAGCGCTCGC TAACCTTTTT	8280
TTTCTTGGCT TCAGCACGAG TTTGCTTGGC AATCCACTCT TCATTCTGCT GCGGAGCCTG	8340
ATCCAAATGA CTAGCAATAT CATCCAGTTG ACCCTCAATA TCATCCAAC CAACTGCTT	8400
GCGAATCAAA CCTTGTGGA GATTGTTTT TTGAGTTTG GATTCTCCG CCTGTTGACT	8460
GAGCAATTCT GTATCAACCT TCTCAAGATT ATCAATCTTT TCTTGAAGAA GCGCTGGAT	8520
TTCTCTTGT TCAAAATCAA GATTGTCAA TTCCTTGCCT AAGCGTTCAA TATCAGCAAC	8580
TTCATAACGT TTTGCCCTT GCAGTTCTGT CTTAAGCAA CGAGCTTGGC CTAGCTCTTC	8640

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CTGCAAGTTT	TGATAGCGTT	CTTGGATGGC	ATTTTGTGTA	GACTTAATCT	CTTCAATCTC	8700
AGCTTCCAGA	TTTGTCTGT	CACTGGAGAT	TGCAGCAAGA	CGCTCTGGC	AGTTTTCCCTT	8760
ATCCGCTTGC	CAATCTCCCT	CGGAAAGACG	ATCTATTTCC	TCTTCTTGGA	GTTTCCAAAG	8820
AGTTTCCAGT	TCTTCAACTT	GCTGACTAGT	TTGCTGATAA	GCGAGGAACA	AGCCTTGCTC	8880
CTGAATACGT	GCCTGCTCTC	CTTGAGATTT	AATAGCTTCT	AATGACTCGG	TCAATCTGGC	8940
CATCTCATCT	TGCAAGGTCT	TCAAAGTCGC	CTCTTCTGAA	CCCAAGCTTG	CTTCTTCTTC	9000
AGCAATTTCT	TTTTGTAATT	GCTCCAGTTC	TGGCTTGATA	AAAATGCTGT	TATTCTGGCG	9060
ATTGGCACCA	CCTGCATAAG	AACCACCTGT	GCGCAACTCT	GTCCCATCCA	ATGTCACCAT	9120
ACGAACCTGA	TAACGAACTT	GGCGAGCTGC	TGCACGCGCA	TGTTCTACGG	TATCAAAGAT	9180
AGCCGTCGTA	GCTAGCAAGT	TCTTGAAAAT	GGCTTCCAGT	CTAGTATCAA	AAGTCACCAA	9240
CTCATCTGCC	ATCCCAAGGA	AACCTGGGCT	TACAGCGATA	GCATCTTGGT	TCTGACTAGA	9300
AATCGTACGC	GCCTTGATAG	TGGTCAAAGG	AAGAAAGGTT	GCACGACCGG	CTCTGTTCCG	9360
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ACTTGCCCTT	AAGGCAATCT	CTAGGGCAGT	TTGATAATAA	ACATCAAAGG	TCAGATGCTC	9480
ACTGACTGCA	CCAATAATCC	CACCTAGGCG	ATCTTTTTCT	TGGAGAACAC	TCTTAACACC	9540
TGCATAAAAG	TTACTATGAT	TTCTCAGGAT	ATTTTCCAAA	CTTTGAGCTC	TGGCCTGCTT	9600
GTTTTTGAGA	TTATCCAGAC	GGTCAAAGAG	TTGGCTTTGT	TGAGCTTGAT	AGGAAGTTT	9660
CTGCTCCTCT	TGCTCCTTGG	CAATAGCTTG	GTAGTCAGCC	AATAATTTCT	GAACCTGCTC	9720
CTTGGCAGTT	TCAAGCTCTT	CCTTTTGCTG	ACTAGCCTTC	TCTTTAGCTA	TAGCTAATTG	9780
CTCTTTCAGC	TTTTCTAGTT	GATCTGCTTG	TTTTTGAGAA	AGCTGACGAC	TATTTTCCAA	9840
CTCATTCCTA	ATACGGGTCA	ACTGGTTTGA	GACATCCGCT	TCTTCTTGTA	AAAGAGCTAC	9900
AAAGCGTTCA	CGTAAGAGCT	CAATCATCTG	ATCAGGATCG	TCTGAGAAAG	CCAGCAATTC	9960
AGCTTCTAAA	CGATTGAGTT	TTTGATTATT	TTGGACTAGA	TTTCCCTCTA	ACAGAGCTAA	10020
AGAGCTTTCT	TTATCAGACT	TTTCTTTGCT	GAGTGAATTT	CTCTTATCCT	CCAAAGCAGC	10080
CAAACGGGCT	TGTGCCTCCT	GTTGATTCAA	GGCCACTTGC	TCCGACTCCA	GTTTCGATAG	10140
GGCTAATTTT	CTTTCTAAAT	CACATACTAG	ACTAGTCAAG	TCCATCAAAC	TGCCTTGGTC	10200
TTTGGCCATT	TCAGCCTGTA	AATCTTGGCG	TTGCTTTTTA	AGAGTTTGAT	TTTCTTCTTC	10260
TAATTTTTCA	CGCTTTTGGT	AATAACTCAT	CAAGAGTTCT	TGAACCTGAG	TCAACTCTTC	10320
TTCTGTGAC	TCTAGTTCAG	CCTTATTTTC	CTTGATTTGA	GCAACCAGAA	CATCTAAATA	10380
AATAGCCTTA	CGTTGTCCTT	CCAAGTCTAA	AAACTTACGG	GCATTCTCAG	CTTGCTTCTC	10440

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AAGAGGCTTG ATTTGATTAT CCAACTCGTA GATAATGTCC TCTAAGCGGT CCAGATTATC	10500
CTGAGTTTGC TGCAGTTTAC TCTCGGTTTC TTTTCTGCGA GTCTTGTATT TTAAACTCC	10560
AGCAGCTTCT TCAAAAATAG CTCGTCGTTC CTCAGGCTTG GAATTAAAA TCTCCTCAAC	10620
CTTCCCTTGG GAAATAATAG AGAAGGAATC TCGTCCCAAT CCAGTATCCA AGAAGAGGTC	10680
ATGAATATCA CGCAGACGGA CTTTCTTGCC GTCAATCTTG TATTCGCTAT CTCCACTACG	10740
ATAGACATGG CGTTCACCC TGATTTCTTG ACCTGCATCC TTGATAAATC CGTCATGATT	10800
ATCCAGAGTC ACAACTACAG AAGCATAATT GAGCGGTTTG CGACTTTCGG TTCCAGCAAA	10860
GATGATATCC GGCATCTTGC CCCACGGAG ACTCTTGACA CTAGACTCCC CCAAAGCCCA	10920
ACGCAGACTT TCTGTAATAT TGGACTTTCC AGATCCATTG GGTCCAACAA CTGCCGTCAC	10980
ACCTTGGTCA AAAACGACCT TGGTCTTATC AGCAAAAGAC TTGAACCCCT GAATTTGAT	11040
TTCTTTTAAA TACATGAATC CAGCCCCTTC TCAACGGCAT TTTTGGCAGC TTCCTGCTCT	11100
GCTAATTTCT TAGAACGACC TTGGCCTTGA CCGATGCTCT TACCTTCAAC AAGAATTCT	11160
ACATCAAAAA CCTTATCGTG AGCAGGCCCT GTTTCAGAAA TCACCTGATA ACGAATAGCC	11220
ACATCACCAT TGACCTGAAG CAACTCTTGG AGATGGGTTT TATAGTCTGT AATCATCTCA	11280
AACTCGCCTG CTTCAACCTT AGGAATCATG ACTTGATAGA TAAATTCCTT GACCTTGGCC	11340
ACATCCTTAT CCAAAAGAAG GGCACCAAGA AAGGCTTCAA AGGCATCACC AAGAATGGTG	11400
TCACGATTGC GACCACCTGA TTTTCTTCC CCTTACCCA ACTTGATAAA CTGGTCAAAC	11460
TGGCAATCAC GCGCAAAACC AGCTAACTC TCCTCACGGA CAATCATAGC ACGGAGTTTT	11520
GATAGGTCAC CTTCAGGCTT TTTAGGATAT TTTTATATA GATATTCTGA AATCAATAAC	11580
TGTAGAACAG CGTCTCCTAA AAATTCCAAG CGTTCATTGT GTGAAATTTT TAAGAGGCGG	11640
TGCTCATTGG CATAACTCGT ATGAGTAAAG GCAGTTTCCA GTAACTTTTT GTCTGCAAAT	11700
TCGATTGCAA AATGATTCTT TAGTACAGTT TGTAAATCTT TCATACCAAC CTCTTTCTAA	11760
CTGATAATAG TCCTTTTAT TATATCAAAA AAAGCCCCCT GAGTCACTCT AAAACGGGAC	11820
TGGAAAGCAT TTGGGAATTC TTTAGACAGA GATTCTCAGT TTTAGCGGCA AATTTGGGTC	11880
AGGATAAAGA AAAAAGCCCT ATTAAAGGCT TTTTAGGATG TTTACATCCA CCCTGAGGGA	11940
ATCGAACCCC CATCTCAAGA ACCGGAATCT TACGTGATAT CCATTACACT AAGGGTGGAA	12000
ACTTGTTTTA TTATAACAGA AATTGCTCT AATAACAAGT TTTTGGTCA AAGACCCCGT	12060
CTTAGTGGGA AGCATCCCCA TTCCAGATGG AGTTTTTCAC GATCACATAA TCAACGTGTT	12120
TAAGGTCAGC AACCTGACGT CCACCTGCAT AAGAAATAGC ACTTTGAAGG TCTTGTTCCTA	12180

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TCTCAGTTAA AGTGTCTTGC AGATGACCTT TAGCAGGAAG CAAGATACGT TTGCCTTCCA	12240
CATTTTGTGA AGCACCTTTT TGATATTGTG AGGCTGAACC ATAATATTCT TTGAACTGTT	12300
CACCATCGAC TTCAATCGTT TTCCCTGGAC TTTCAATGTG TCCTGCAAAG AGGGAACCAA	12360
TCATGATCAT GCTAGCACCG AAGCGGATAG ACTTAGCAAT ATCACCGTGA GTACGAATTC	12420
CTCCATCAGC GATAATCGGT TTACGCGCAG CCTTGGCACA CCAGCGTAGA GCAGCCAACT	12480
GCCAACCACC TGTACCAAAA CCAGTCTTAA CCTTGGTGAT ACAAACCTTA CCAGGACCGA	12540
TTCCGACCTT AGTAGCATCC GCACCAGCAT TTTCCAATTC ACGCACAGCT TCTGGTGTTC	12600
CCACATTTCC AGCAATGACA AAGGTATCTG GCAATTCTTT CTTGATGTGT TGAATCATAG	12660
AAATCACGCT ATCCGCATGA CCATGAGCAA TATCAATAGT GATATACTCA GGAGTATCAG	12720
CCTTGAGCTG GCTAACAAAA TCATACTCAT AATCCTTAAC ACCGACAGAG ATAGAAGCAA	12780
TGAGCCCTTG ATTGTGCATT CGTTTAATAA AAGGAATGCG TCCTGCCTCA TCAAAACGGT	12840
GCATAATGTA GAAGTAACCA CCTTTAGCCA GTTGCTCTGC TACATTTTCA TCCAAAATCG	12900
TCTGCATATT CGCTGGCACA ACAGGTAGTT TAAAGGTGTG ATTTCTTAAA GTGACACTTG	12960
TATCCGCTTC TGCACGGCTT TTAATGACAC ATTTATTTGG AATCAATTGA ATATCTTCGT	13020
AATCAAAAAT TGGAAATTCA TTAAACATAT CGATGTCTCG TTTCTTTTGT AATGACCTAC	13080
CTATGCTCTT GCATCACTAC GCCTTTTCCG ACGTTTCCTG G	13121

(2) INFORMATION FOR SEQ ID NO: 127:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 9578 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 127:

CCGAATGCAA TGTTTACGGT TGAACCTGAA AATGGACATC AGATTTTAGC AACAGTTTCT	60
GGTAAATTC GTAAAACTA TATTCGTATT TTAGCGGGAG ATCGTGTTAC TGTCGAAATG	120
AGTCCATATG ACTTGACACG TGGACGTATC ACTTACCGCT TTAAATAATC GAAAAACTTG	180
GAGGGATAAG AAATGAAAGT AAGACCATCG GTCAAACCAA TTTGCGAATA CTGTAAAGTT	240
ATTCGTCGTA ATGGTCGTGT TATGGTAATT TGCCAGCAA ATCCAAAACA CAAACAACGT	300
CAAGGATAAG ATAGAAAGGA GAAACATGG CTCGTATTGC TGGAGTTGAT ATTCCAAATG	360
ACAAACGCGT AGTAATCTCA TTGACTTATG TTTATGGTAT CGGACTTGCA ACATCTAAGA	420
AAATTTTGGC TGCTGCTGGA ATCTCAGAAG ATGTTTCGTGT ACGTGATCTT ACATCAGATC	480

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AAGAAGATGC TATCCGTCGT GAAGTGGATG CAATCAAAGT TGAAGGTGAC CTTCGTCGTG	540
AAGTAAACTT GAACATCAAA CGTTTGATGG AAATCGGTTC ATACCGTGGT ATCCGTCACC	600
GTCGTGGACT TCCTGTCCGT GGACAAAACA CTA AAAACAA CGCCCGCACT CGTAAAGGTA	660
AAGCTGTTGC GATTGCTGGT AAGAAAAAT AATATAGGAG GTAAAAGTCT TGGCTAAACC	720
AACACGTAAA CGTCGTGTGA AAAAGAATAT CGAATCTGGT ATTGCTCATA TTCACGCTAC	780
ATTTAATAAC ACTATTGTTA TGATTACTGA TGTGCATGGT AATGCAATTG CTTGGTCATC	840
AGCTGGTGCT CTTGGTTTCA AAGGTTCTCG TAAATCTACA CCATTGCTG CTCAAATGGC	900
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AGTAACAGCA ATTCGTGATG TGA CTCCAGT GCCACACAAT GGTGCTCGTC CTCCAAAACG	1080
TCGCCGTGTA TAATCATCGC ATTACACTGC TTTTCGTTTA AGAGGGAGTA ACTAAATGAT	1140
CGAGTTTGAA AAACCAAATA TAACAAAAT TGATGAAAAT AAAGATTATG GCAAGTTTGT	1200
AATCGAACCA CTTGAACGTG GCTACGGTAC AACTCTTGGT AACTCTCTTC GTCGTGTACT	1260
TCTAGCTTCT CTACCAGGAG CAGCTGTGAC ATCTATCAAC ATTGATGGTG TGTTACATGA	1320
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AATGTCAGTG AAATCGTACG TTGAAGACGA AAAAATCATC GAACTGGATG TTGAAGGTCC	1440
TGCTGAAGTA ACAGCTGGTG ACATTTTGAC AGATAGCGAT ATTGAAATTG TAAATCCAGA	1500
TCATTATCTC TTTACAATCG GTGAAGGTTT TTCTCTAAAA GCGACTATGA CTGTTAACAG	1560
TGGTCGTGGA TATGTACCTG CTGATGAAAA TAAAAGGAT AATGCACCAG TTGGAACACT	1620
TGCTGTAGAT TCTATTTATA CACCAGTTAC AAAAGTCAAC TATCAAGTGG AACCTGCTCG	1680
TGTAGGTAGC AATGATGGTT TCGACAAATT AACCTTGAA ATCTTGACAA ATGGAACAAT	1740
TATTCCAGAA GATGCTTTAG GGCTTTCAGC ACGTATTTTG ACAGAACATC TTGATTTGTT	1800
TACAAATCTT ACTGAGATTG CTAAGTCAAC TGAAGTGATG AAAGAAGCTG ATACTGAATC	1860
TGACGACCGT ATTTTAGATC GTACGATTGA GGAACGGAC TTGTCTGTGC GTTCATACAA	1920
CTGTTTAAAA CGTGCCGGTA TCAATACTGT GCATGATTTG ACAGAAAAAT CTGAAGCAGA	1980
GATGATGAAA GTACGAAATC TTGGACGCAA GAGTTTGGA GAAGTGAAAC TCAAACATCAT	2040
TGATTTGGGT CTTGGATTAA AAGATAAATA AAGGAGGAAT ACATGGCTTA CCGTAAACTA	2100
GGACGCACTA GCTCACAACG TAAAGCAATG CTTGCGGATT TGACAACTGA CCTTTTGATC	2160
AACGAATCAA TCGTGACAAC TGAAGCTCGT GCTAAAGAAA TCCGTAAAAC TGTGAAAAA	2220

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ATGATTACTC TAGGTAAACG TGGTGATTG CATGCACGTC GTCAAGCAGC TGCTTTCGTA	2280
CGTAATGAAA TCGCATCTGA AAACATGAT GAAGCAACTG ATAAGTACAC TTCTACTACA	2340
GCACTTCAAA AATTGTTCTC AGAAATCGCA CCTCGTTATG CTGAACGTAA CGGTGGATAC	2400
ACTCGTATCC TTAAAACTGA ATCACGTCGT GGTGATGCAG CGCCAATGGC GATCATCGAA	2460
TTAGTATAAA ATCATCAATT TTGTTGAGTG TTATGATGAT GGAGTCTTGT GCTCTTAGTC	2520
TAGCTCTGGT CTACCGCTAG GATTTTCGGTC CTAGCGGGAA CACTCATCAT AAGTTGGGAT	2580
AGTAGACGCT TGTTTACGAA ATTGTTTTTT TCTTAAGAAC AACTTCGTAA GCAGGCGTTT	2640
TTGAGTATTT TCGTTAGAAT TATGCTATAC TATTTGAAAA GAATCCTGTT TAATGTTAAG	2700
GTTTCTTATT TTAAGAAGAA TTGGAGTTTA CTTATGAAAG CCATTATAAC TGTGTTGGT	2760
AAAGATAAAT CTGGAATTGT TGCAGGTGTT TCTGGTAAAA TTGCAGAATT AGGATTGAAT	2820
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GAGGTCATCA TGGATATTAG ACAAGTTACT GAAACCATCG CCATGATTGA GGAGCAAAAC	3060
TTCGATATTA GAACCATTAC CATGGGGATT TCTCTTTTGG ACTGTATCGA TCCAGATATC	3120
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GTTGGTGATG AAATGCGGC TGAGTTGGGA ATTCCTATCG TTAATAAGCG TGTATCGGTG	3240
ACACCTATTT CTCTGATTGG GGCAGCGACA GATGCGACGG ACTACGTGGT TCTGGCAAAA	3300
GCGCTTGATA AGGCTGCGAA AGAGATTGGT GTGGACTTTA TTGGTGGTTT TTCTGCCTTA	3360
GTACAAAAAG GTTATCAAAA GGGAGATGAG ATTCTCATCA ATTCCATTCC TCGCGCTTTG	3420
GCTGAGACGG ATAAGGTCTG CTCGTCAGTC AATATCGGCT CAACCAAGTC TGGTATTAAT	3480
ATGACGGCTG TGGCAGATAT GGGACGAATT ATCAAGGAAA CAGCAAATCT TTCAGATATG	3540
GGAGTGGCCA AGTTGGTTGT ATTCGCTAAT GCTGTTGAGG ACAATCCATT TATGGCGGGT	3600
GCCTTTCATG GTGTTGGGGA AGCAGATGTT ATCATCAATG TCGGAGTTTC TGGTCCTGGT	3660
GTTGTGAAAC GTGCTTTGGA AAAAGTTCGT GGACAGAGCT TTGATGTAGT AGCCGAAACA	3720
GTTAAGAAAA CTGCCTTTAA AATCACTCGT ATCGGTCAAT TGGTTGGTCA AATGGCCAGT	3780
GAGAGACTGG GTGTGGAGTT TGGTATTGTG GACTTGAGTT TGGCACCAAC CCCTGCGGTT	3840
GGAGACTCTG TGGCACGTGT CCTTGAGGAA ATGGGGCTAG AAACAGTTGG CACGCATGGA	3900
ACGACGGCTG CCTTGGCCCT CTTGAACGAC CAAGTTAAAA AGGGTGGAGT GATGGCCTGC	3960
AACCAAGTCG GTGGTTTATC TGGTGCCTTT ATCCCTGTTT CTGAGGATGA AGGAATGATT	4020

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GCTGCAGTGC AAAATGGCTC TCTTAATTTA GAAAACTAG AAGCTATGAC GGCTATCTGT	4080
TCTGTTGGAT TGGATATGAT TGCCATCCCA GAAGATACGC CTGCTGAAAC TATTGCGGCT	4140
ATGATTGCGG ATGAAGCAGC AATCGGTGTT ATCAACATGA AAACAACAGC TGTTTCGTATC	4200
ATTCCTCAAAG GAAAAGAAGG CGATATGATT GAGTTTGGTG GTCTATTAGG AACTGCACCC	4260
GTTATGAAGG TTAATGGGGC TTCGTCTGTC GACTTCATCT CTCGCGGTGG ACAAATCCCA	4320
GCACCAATTC ATAGTTTAA AAATTAAGAA AATAGGAGAA ATTTTAAGTT CTATTTAAGA	4380
TTAGACGTGT ATACTATAAT CATTAATTAAGACCTCCTA ATATTATTG AACAGATAA	4440
CACTGAATTA GTTTGAATTT GATTTTCATC TAATATCTTT ATTTAATGAA CTCCTAAACT	4500
TTTTTATAAT AATCTCCTTC AAAAGTCGCC TGTATGGGTG GCTTTTATTT TATCATTCAT	4560
GATATAATAG AAGCAAACGG AGGACGGAAG ATGGTAAAAG TACGATTGTA TTTGGTACGT	4620
CATGGCAAGA CCATGTTTAA CACGATTGGT CGCGCGCAAG GTTGGAGCGA TACTCCCTTA	4680
ACTGCTGAAG GTGAACGAGG GATTCAAGAG TTAGGAATCG GTTGCAGAG ATCTGATCTA	4740
CAGTTTGAGC GTGCTTATTC GAGTGATTCT GGTGCGTACCA TTCAGACCAT GGAATTATC	4800
CTTGAAGAAC TTGGCTTGCA GGGGGAAATC CCTATCGCA TGGACAAGCG TATCAGAGAA	4860
TGGTGTTCG GTAGTTTGA TGGAGCCTAT GATGGCGATC TTTTCATGGG CATTATTCCT	4920
CGTATCTTTA ATGTGGACCA CGTTCACCAA TTGTCTTATG CTGAACTGGC TGAGGGCTTG	4980
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GTCAGCCATG GAATGACTAT TGGAAACCAT GTTTATCTGA TTAATGGCAT GCATCCGCAT	5160
GGTCTGGATA ATGGTAGCGT GACAATCCTT GAATATGAGG ACGGCCAGTT TAGGGTTGAA	5220
GTTGTGCGTG ACCGTAGTTA CCGAGAGCTA GGACGTGAGA AGATGGAAGA AGGCTCTATT	5280
TAATCAGTCT AGACTTGCTT GCCATGAGCT AGGGATTGTA TAAGAATATC AAGATAAGAA	5340
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AGTTGACAAG GTTGCGGCTA CACCGTAATT TCCTCTGAGA ACCTCTGTAT AAATAGCTAC	5520
AGTCATTGTT CTTGTTTGA CATTGTAGAG GAGGATAGAA GTAGAGAGTT TTGAAATCAT	5580
TGTGACTCAA GATAAGATGG CTCCAGAAAT GATACCAGAT AGCATCATTG GAGTTGTAAT	5640
CTTAGCAAAG GTATTGAGAC GACTACTTCC TAAGCTTTCA GCAGCTTCTT CAATACTTGG	5700
TGCTATTTGT TGTAAAGCTAG CAACAGATGA GCGAATAGTA TAAGGTAATC TTCTGGCAGA	5760

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TAGAGACATA ATCAAGATGA AAGCAGTCCC TGTAATCATA AGAAATCCAC TTCCAAATAG	5820
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GGAGATAAAT GTCGCAAATA GAACAACTAG AACTAAGGCA ATCAAAGGGA TACGAATGGT	6000
ATTGAAAATA GCAGATCCCA TACGATGGAA AGCTACCTTG TAACTGTTTG GAGAATAACC	6060
TTTAACAGAT ACCATACCTG ATGTTTTTAG GAAAGAGGTA TAAATTAAGT AGATTTGAGG	6120
TAAAACAGAG ATAAAGATAA TTCCGTAGAC TGTTGCATAA ATGGCAGCCA TTTTTCCTTT	6180
TGTAGTTTTT TTAGGCTCAA TTGGATGGAG CAGATTCATG CTGAAACTGT AGCGGTTTGC	6240
AATGTGTTTT TGGATAAGGA AAATTGCCAA GGCAATGATA ATCGCCATAA TTGCAAAAGC	6300
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CCGAAGGACC CCATGCTTTC AGCTGCTTCA AGTAGAGAAT TGTCAATACT GTTCATTGTT	6540
CCAGCAACAT ATAGAAATAC CAGTGGAAT AGTTGCAGTG TAAAGACAAG TACAATTCCT	6600
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ACCTCATTTT GTCCTAGCAA GAGAACCCAG GAGTAGGCTC CTACGAAAGG AGCTGACATG	6720
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AGTGAGAATT GTCCTTCATG TATAAGTGCT TGCTTGAGCA CGGTAACGAT AGGATAAACG	6960
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GATAAACTCT TCGGGACGAA TGCTTACATG AATAGCTTGC TCCTCAACCT GATCAAGAGC	7320
TGGCATTCGA AGGGCATAGC CATCTGAAAA GACGATATAA GCGCCGTCGC TCCGTTTTTC	7380
AAGATTGGCA GGGATAATAT TTGTGCGTCC GATAAAGGTT GCCACAAACT CATTAGCTGG	7440
TTTATGATAG AGTTCCTTTG GTCGGCCGAT TTGTGGATC ACCCCATCTT TCATAACAGC	7500
AATTTGGTCT GAAATAGCCA TGGCTTCTTC TTGGTCGTGG GTTACATAAA CAGTTGTAAT	7560

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TCCCACCTTCG TGTTGGATTT CTCGGATGGC TTGACGCATA TCCAAGCGAA GTTTGGCCTC	7620
CAGATTACTA AGTGGCTCGT CCATGAGGAG AACACTTGGA TTAACCGCTA AGGCGCATGC	7680
CAAGGTGACA CGTTGTTGTT GTCCACCACT GAGTTTATCG GGCTTTCGAT CCGCATATTG	7740
AGCAATTTGC ATGAGTTCAA GATACTTGTT GGTCTGTGA ATCAATTCTT CTTTGGAAAC	7800
CTTCTTTTGC ATAAGACCAA AAGCAACGTT GTCTCGGACA GTCAAATGTG GGAAAATAGC	7860
GTAGTTTTGG AAAACCATCC CGATATTGCG TTTGCTGGGT TCCATATTAT TGATTTTTGT	7920
ATCATCGAAG TAAATTTCTC CACCTTCGAT ACTGTTGAAA CCTGCAATCA TACGAAGAAG	7980
GGTCGTTTTT CCACATCCTG AAGCTCCAAG AAGGGTAAAG AGACTTCCTT TTGGAATTGT	8040
AATGTTCAAA TTCTCAATAA CAGGGACATC GTGGTAGATT TTTTGGCGT TAATAATTTT	8100
GATCTCACTC ATAGTGAACC TCTTTTACTG TTTAGATTGG ATATCTGTAA AGACTTCGTT	8160
GTATTTCTTA ACGATATCTG ATTTATTCTT GATGACATAA TCATAATCTT CAGTGAGTGT	8220
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GACGGTTCCT TCTTTTGGAT AGACTACCTT AATGTTAGCT CCGTCATTTA AGAGTTTAAC	8460
TGCTGGATCT TCATAAGAGA GACCAACAGC CATTTCTCCA TCAGCGACTA CTTTATAGAC	8520
ACTAGATGAA CTTGAACCGA TTTTACCATC AATAAGTGTG AAAAGATCTT TTACATAAGA	8580
CCAAGCCTTA TCATCTTTGT AACCACCTTG AGCTTGTAGC ATATTTGTTA ATTGAGCAAA	8640
GGCGCTAGAA GAGTTTGCTG GGTGAGCAGT TGCGATTTTT CTTTTAGTT CAGGTTTGAA	8700
AAGATCGTTA TATCCTTCGA TGTTTCATGCC TTTAGTTAAA TCAGGGTTGA CGATTAAAAC	8760
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ATTATCATTT TCTTTTGAAG TATAGTTTTC AAAGAGTTCT CCGTGGGTAG TATATTGTGT	8880
ATAAGAACCA CCAAAGATAA CATCAGCTAC AGGAACTTCT TTTTCTGACT CTAGTTTTTT	8940
GAAAAGTTCT CCACTACCAG CTTGAATCAG TTCTACTTTG ATACCATATT TTTCTTCAAA	9000
GGCAGGAATA GTTGCTCCAA TTAAGCCCTC TGAGTTTGGT GAATAAACGA CTAGCGAACC	9060
GCCGTCTCCT TTATCAGATG AACTGTCATC GGCAGATTCA TTAGAAGAAC AAGCAGCATA	9120
ATACATCCAT TTCTTTTCA TGATGGATAC CTCGGTTGTG TTATTTAAGT TTATTTTAAA	9180
ACAATGTAAG CGTTTTTAAA ACATACAATT CTATTCTATA GTGTATTGAA TCTATAACAG	9240
TACACTTTGA CTGCTAAAT ATTTCTATAA ATTAATTGA CTTTCCTGAT AGAGATGTTT	9300

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ACATCTTATT TCAATTCAC	ATATTAGAGT AAAATTCTCT	ACAAAAAGAA GAATAGCCTA	9360
TTTTACTATT CTTCTGAGT	ATTTCAATTC CTTTGGGGAA	ATATGGAGAT ACTTTTAA	9420
TCCTGACAAA TGGTTGTTT	TTTTCTAAA TCGGTGATAC	TGTATCGGAG AATGCGCGTG	9480
AGGTCACAAA GGCTGCGATA	GAGCTTCTAT GGAGAATTTC	TTTTTGGAGA GATTTTAA	9540
AGGAATGAGA CATCCGCTAC	CTCCTTGGA GGTTTT		9578

(2) INFORMATION FOR SEQ ID NO: 128:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 13440 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 128:

CGGGCTGTTG TGACGATTCT	TATTTCTATC TGTGTTATCT	TTTTGGGAAC TATTTGGGT	60
GTTGTCTTGG CTTTGGGCA	ACGTTCAAAG TTAAACCGC	TTGTTGGTT GGCCAAC	120
TACGTTTGA TTTCCGTGG	GACACCGATG ATGGTTCAA	TTATGATTGC CTTGCTCT	180
ATGCATATCA ATGCTCCGAC	TATTCAGATT GGAATTTTAG	GTGTTGATTT TTCGCTCTG	240
ATTCCAGGGA TTTTGATTAT	CTCTATGAAT AGTGGTGCTT	ATGTTTCGGA GACTGTTCTG	300
GCCGGAATCA ATGCGGTTCC	AAAAGGTCAG CTAGAAGCGG	CTTATTCGCT AGGGATTCGT	360
CCTAAAAATG CGATGCGTTA	TGTGATTTTG CCACAAGCAG	TCAAAAATAT CTGCCAGCA	420
TTGGGGAACG AATTTATCAC	CATTATCAAG GACAGCTCCC	TCTTATCAGC TATTGGGGTC	480
ATGGAGTTGT GGAATGGGGC	TACAACAGTT TCTACAACAA	CCTATCTACC TTAAACACCA	540
CTTTTATTTG CAGCATTTTA	CTACTTGATT ATGACCTCTA	TTCTGACAGT AGCCTTGAAA	600
GCTTTTGAAA AACATATGGG	ACAAGGAGAT AAGAAATAAT	GACAGAAACC TTGATAAAAA	660
TTGAAAATTT ACATAAATCC	TTTGAAAGA ATGAAGTATT	GAAGGGCATC AACCTCGAGA	720
TTAAAGAGG AGAAGTTGTC	GTTATCATCG GTCCTTCAGG	GAGCGGGA TCTACCTGCG	780
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ATATTACGGA CAAGAAGAAT	GACCTGTTTG CCATGCGTGA	GAAGATGGGC ATGGTTTTC	900
AACAATTCAA TCTCTTCCT	AATATGACTG TGATGGAAAA	TATCACCTTG TCCCCTATCA	960
AGACCAAGG TGACAGTAAG	GCCGTTGCAG AGAAAAGAGC	TCAGGAAC TTGAAAAAAG	1020
TTGGTTTGCC AGATAAGGCA	GACGCTTATC CACAGAGTTT	GTCAGGTGGC CAGCAACAGC	1080
GGATTGCCAT CGCGCGTGGG	TTGGCTATGG AACCAGATGT	TTTGCTCTTT GACGAGCCAA	1140

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CTTCAGCCCT AGATCCTGAG ATGGTTGGAG AAGTTCTGGC TGTATGCAA GATCTAGCCA	1200
AGTCAGGAAT GACCATGGTT ATCGTAACAC ATGAGATGGG ATTTGCCCCG GAGGTGGCAG	1260
ATCGTGTCAT CTTTATGGCA GACGGTGTGG TTGTGAAGA CGGAACACCT GAGCAGATTT	1320
TTGAACAAAC CCAAGGACAA AGGACTAAAG ACTTCTTGAG TAAGGTTTTA TAAGTTAGCT	1380
TTGTTTAGCT ATTTGTAGCC AGCTTTAAAC GTTAAAGAGA AGATTAGTGA AAAGCTCAAC	1440
CAGAGCTTTT TCTTATAGTT TAAAGCTATA GGATGCGCTA GGAAAGAAGT GTTAGAGCTA	1500
CATTGTATTT TTTGGTATAA TTAAAGATAT TTGTAAGAAA AGAGAAGTGA TATGACACAG	1560
ATTATTGATG GGAAAGCTTT AGCGGCCAAA TTGCAGGGGC AGTTGGCTGA AAAGACTGCA	1620
AAATTAAAGG AAGAAACAGG TCTAGTGCCT GGTTTGGTAG TGATTTTGGT TGGGGACAAT	1680
CCAGCCAGCC AAGTCTACGT TCGCAACAAG GAGAGGTCAG CCCTTGCGGC TGGTTTCCGT	1740
AGCGAAGTAG TACGGGTTC AGAGACCATT ACTCAAGAGG AATTGTTAGA CCTGATTGCT	1800
AAATACAATC AGGATCCAGC TTGGCATGGG ATTTTGGTTC AGTTGCCATT ACCAAAACAC	1860
ATTGATGAAG AGGCGGTCT ATTGGCTATT GACCCAGAAA AGGATGTGGA TGGTTTCCAT	1920
CCTCTAAACA TGGGGCGTCT TTGGTCTGGT CATCCAGTCA TGATTCTTTC GACACCGGCA	1980
GGAATTATGG AAATGTTCCA TGAATATGGG ATTGACTTGG AAGGTAAAAA TGCAGTCGTC	2040
ATCGGTTCAT CCAATATTGT CGGAAAACCT ATGGCCAGC TTCTTTTGGC AAAGAATGCA	2100
ACAGTAACCT TGACTCACTC ACGTACTCAT AATCTTTCCA AGGTGGCTGC AAAAGCAGAT	2160
ATTCTGGTTG TTGCAATCGG TCGTGCCAAG TTTGTGACTG CTGACTTTGT CAAACCAGGT	2220
GCGGTAGTCA TTGACGTTGG GATGAACCGC GATGAAAATG GTAAGCTCTG TGGGGATGTT	2280
GATTATGAGG CGGTTGCCCC ACTTGCTAGC CACATTACGC CAGTCCCTGG AGGTGTCGGT	2340
CCTATGACCA TTAATATGCT GATGGAGCAA ACCTATCAGG CAGCACTTAG GACATTGGAT	2400
AGAAAATAAG ATAAAAATTT TCTGAGGAAA GTGTATTTTC TATAGCTATA TCTAAAATGA	2460
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TACAATGGGA TGGAATATAC TACTTAGCAC TAATTGATTA TCCAAATATT CAAGAGTGGG	2640
AATTAGAAAA AATTGCTAAA TTTATAGCTT ACGAAAAACT TCATAAACGT CAAACAAGTA	2700
TTGAGTGTGC TGATTCTTGT TTAAAAAAG AAATTTTAGA TTACATCTGT CAGCATCCCT	2760
TTCTGCCACC ATTTACTCCT ACAGATAAAA GAGTAGCCTC GACTTATGAC CTACATAAGA	2820
GGTTAGTGAC TTCAGACTAC TGTAGTCATA CTACGACTAT AGATGCAGCG ATTTCTATTT	2880

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TTAAACTGG	TCGCTTTTA	TCTGCTGTGA	AAGCCTTTGG	GCGAGATGCT	GAGGAGTTGG	2940
TTTTGGATAG	TCGAAATGCT	GCATCTGATC	CGATAGATTA	TTTTGACTAT	GTCATGTTAG	3000
GGTGGTCAAA	TACAAGTTCT	GGTTATCGAT	TGGCGATGGA	GCGTTTATTA	GGTCGAGCTC	3060
CTTCAGAGAA	AGAATTACAA	GACAAGTTTA	TTCCTGGAGT	AAGTTTTCAT	TTTATCTATA	3120
CAGATTTGAT	TAAAGTTCCT	GGTTATATTT	TTGATGGTTA	CCATGCTGTA	AAAATTAAGG	3180
ACATGCTTAA	TTTATTAAGT	GAGTTGTATA	TTTGCATTAT	TCCAATCAT	AATAAGAGCC	3240
AATTTGAAAA	TATTATTCCA	ACCAAAATAC	AAGATAGGGT	GTATTATCTT	GACTATGCTG	3300
GAGAAGACTT	AGAAGAGTGG	ACTAAGAAAG	TCTATCAAGT	TGTTTTAAAA	CAATCAGATA	3360
AAGGATAGTT	GAGGAAAAAA	CGATGAAAGT	GATTGATCAA	ACCTTACTAG	AAAAAGTCAT	3420
TATTGAACGT	TCTTGTACAA	GTCATAAAGG	AGACTACGGT	CGTCTGCTGT	TGCTTGGTGG	3480
GACTTATCCT	TATGGTGGTG	CCATCATCAT	GGCTGCTTTA	GCAGCTGTAA	AAAGCGGTGC	3540
AGGATTGGTA	ACCGTTGGAA	CGGACAGGGA	AAATATCCCT	GCTCTACACA	GCCATTTGCC	3600
TGAGGCTATG	GCCTTTCTC	TGCAAGATCA	GTAATTGTTA	CAAGAGCAAT	TGGAGAAGGC	3660
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CATCCTTGCT	AGGACAAGTT	TGTTGTTTCC	ATCTAACCAG	CTTATCTTAA	CTCCCCACCA	3840
AAAAGAATGG	GAAAACTGT	CTGGTATTGC	TATTGAAAAG	CAAAACGAAG	GTACAACATC	3900
TAGTGCCCTG	ACTTCTTCC	CTCAAGGAAC	AATTTTGGTA	GAGAAAGGTC	CAGCTACTCG	3960
TATTTGGCAA	GTGGCCAGT	CTGATTATTA	CCAGTTAAAG	GTTGGCGGTC	CCTATCAGGC	4020
GACTGGTGGT	ATGGGTGATA	CACTGGCTGG	AATGATTGCA	GGATTTGCAG	GCCAATTTCTG	4080
ACAGGCCACT	CTCTACGAAC	GTGTGGCAGT	AGCAACCCAT	CTTCATTGAG	CCATAGCCCA	4140
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AATTGATTTG	TTAGAGCTCT	ACTTTTATTA	AAAAAATCA	ATTCAAGGA	TAAATAAGCA	4440
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CTTTAATGGA	GGTGTGAG	TGGAAAATCT	GAAGAAAATG	GCAGGTATCA	CGGCTGCTGA	4560
ATTTATCAAG	GATGGGATGG	TTGTAGGGCT	AGGAACAGGT	TCTACTGCCT	ATTATTTTGT	4620
CGAAGAAATC	GGTCGTCGAA	TCAAGGAAGA	AGGCTTGCAG	ATTACAGCTG	TGACGACTTC	4680

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TAGTGTGACC AGTAAACAGG CTGAAGGGCT CAATATCCCG CTCAAGTCTA TTGACCAAGT	4740
AGACTTTGTC GATGTGACAG TCGACGGGGC GGATGAAGTG GATAGTCAGT TTAATGGAAT	4800
CAAAGGCGGT GGTGGTGCCC TTCTCATGGA AAAGGTGGTC GCAACACCAT CAAAAGAATA	4860
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AGAAGTGGTT CAGTATGGTG CAGAGCAGGT CTTTCGTCAT TTTGAACGAG CTGGCTACAA	4980
ACCAAGTTTC CGTGAAAAAG ACGGCCAACG TTTTGTGACC GATATGCAGA ATTTTATCAT	5040
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TTTCAAAAAC AGTTGGTTTG AATGTCCCAA ACATGGCTAA AATAGGTCTT GGAAATATTC	5400
CTCGTGAAAC TCCTCTTAAG ACTGTAGCAG CTGAAAGCAA TCCAACCTGA TATGCAACAA	5460
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CTGAAATTAT CGCAGCTATG AGAGAGAATG ACCTTCTCTT GATTACTGCG GACCATGGAA	6240
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GCCCTGCCTT TAAAGGAAAT GGTCTCATTC CAGTAGGACA TTTTGCAGAT ATTTCAGCGA	6360
CTGTTGCCGA TAACTTTGGT GTGGAACTG CTATGATTGG GGAAAGTTTC TTAGATAAAT	6420

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TGGTATAAGA	TGACGCGCTA	TGCTTTGCTG	GTGAGAGGTA	TCAATGTTGG	TGGTAAGAAT	6480
AAGGTCGTCA	TGGCGGAGCT	TCGTCAAGAA	TTGACAAACT	TGGGACTGGA	AAAGGTTGAG	6540
AGCTACATCA	ATAGTGGCAA	TATTTTCTTT	ACTTCGATAG	ATTCCAAAGC	CCAATTGGTT	6600
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AGTCTAGAGG	ACTTTGAGGC	GGAAC TTGAA	AATCTACCAG	CTTGGTGGAG	CAGAGACTTG	6720
GCACGAAAAG	ATTTTCTCTT	TTACACTGAG	GGTTTGATG	TGGACCAAGT	CATCGCGACA	6780
GTTGAAAGTT	TAGAGCTGAA	AGATGAAGTG	CTTTATTTTG	GAAAAC TTG	GATTTTCTGG	6840
GGGAAATTTT	CTGAAGAATC	CTATTCTAAG	ACTGCCTATC	ATAAGTACTT	GCTGAAGGTG	6900
CCTTTCTACC	GCCACATTAC	TATTCGTAAT	GCTAAAACCT	TTGACAAAAT	TGGTCAAATG	6960
CTAAAAAAT	AATAAAGGAG	ACACACAATG	ACATTTTTAA	ACAAAATCCA	TGAAACTGCT	7020
ACTTTCCTGA	AAGAAAAGGG	AATTCAGGCC	CCTGAGTTTCG	GTCTAATCCT	TGGATCAGGA	7080
CTTGGAAGAT	TGGCAGAAGA	AATCGAAAAT	CCAGTTGTAG	TAGACTATGC	TGAGATTCCA	7140
AACTGGGGCC	GTCAACAGT	AGTCGGTCAT	GCTGGTAAAT	TGGTATATGG	TGAACTGGCA	7200
GGTCGCAAGG	TCTTGGCTCT	TCAAGGGCGT	TTCCATTTCT	ATGAAGGGAA	TCCTCTGGAA	7260
GTGGTGACTT	TCCCAGTTTCG	TGTGATGAAA	GTTCCTGGAT	GTGAAGGTGT	TATTGTAACC	7320
AATGCAGCTG	GCGGTATCGG	ATTGGTCCT	GGTACCTTGA	TGGCTATCTC	AGACCATATC	7380
AACATGACGG	GGCAAAATCC	ATTGATGGGT	GAAAAC TTG	ATGACTTTGG	CCCACGTTTC	7440
CCAGATATGT	CTAGGGCCTA	CACACCAGAA	TACCGTGCCA	CTGCCCATGA	AGTGGCTAAA	7500
AAACTTAATA	TCAAGCTTGA	TGAAGGTGTC	TATATCGGAG	TTACTGGTCC	GACTTATGAA	7560
ACACCAGCAG	AAATTCGTTC	CTATAAGACA	CTGGGAGCAG	ATGCAGTTGG	TATGTCTACG	7620
GTTCCTGAAG	TTATCGTGGC	AGCCCACTCT	GGCTTGAAAG	TTCTGGGAAT	TTCATGTATC	7680
ACTAACTTTG	CGGCCGGTTT	CCAAGAAGAA	CTCAATCACG	AAGAAGTTGT	AGAAGTGACT	7740
GAACGTGTTA	AAGGTGATTT	CAAAGGCTTG	CTTAAAGCGA	TTCTTGCTGA	ATTGTAAGAA	7800
AAAAGATTTA	AAAGGGGAG	TGCCTCTGTT	TTTTCAGGAT	TGACTGCCTA	TCCGGATTAA	7860
AGAAGAAACA	GAGGAATACT	ATGAGCTTCT	TCCTGCTCTT	ATAACTGAAA	GAAGCGGAAG	7920
AATAGGTATG	TCTGATCTGA	TAGCCAGCAT	TGTGAAAGAC	AAGATTCTAG	GATACTAGCA	7980
TTAGCTTCCT	AGCCAAGCAG	ACTAGTATGA	TAAGGAGAGA	TGAGAATGAA	TTGACTTTCT	8040
GAATTTCTCA	GTCTTATCAT	ATATAGCACA	ATGAGATTTC	GCTTGAGTCT	GCTTGTAAT	8100
AAACGAAAAG	AAAGATAAGA	AATAATGAAA	ATTGGTCAAC	GAATTATGCG	CTTTGGCATA	8160
AAAAATTAAG	TATCGGAGTT	GTATCTGTTG	TAGTCGGCTT	TGATTTCTAG	CTCCAGCTGG	8220

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AATTTCAGCC AATGAAGTAA AGCAAGATGT AACATCTGAA GTGGTAATAG GTGTGCTAGA	8280
TTCTAAGGAG GAATTGAAAG AGTCAGAAAA TGATGCTCCA AAAC TAGAAA CTCCTCTTAG	8340
AGAGGAGCCA AGACTAGCTC CTCAAACGCT TCCGGAAGCA AGTGAAGTTC TTGAAAACAA	8400
AAGGGAAGAG TCAAAAGTAG AGATAACATA ACCAGCTCAA GCGGATGATA TCCGCAAGGT	8460
TGTTGGGGAA TTAGCCAAGG ATATAAGTAT TACTAAGTTG TATATGACAG GTCATTCTCT	8520
TGGATGTTAC CTAGCTCAGA TTGCAGCGGT TGAAGCTTAC CAAAAATATC CTGATTTTTA	8580
TAACCATGTA TTGAGGAAAG TGACAACTTT CAGTGCTCCT AAAGTGATTA CTTCCAGAAC	8640
TGTTTGGAAT GCTAAGAATG GTTTCTGGGA TGTGGTTTG GAAAGTCGTA AATTAGCTGT	8700
TAGTGGA AAA ATTAAGCATT ATGTGGTTGA TAATGACAAT GTTGTGACTC CCTTGATTCA	8760
TAATAATCGT GATATTGTTA CATTTACAGG TAATTCACGC TTAAACACC GTTCTCGTGG	8820
CTATTTTGAA AGTCCAATGA ATGATATTCC TAAC TTTAAT ATTGGTAAAC AAGCTACCTT	8880
GGATAAACAT GGTATCGTG ATCCGAAATT GGATAAAGTG CGATTCTTTA AGAAACAGGC	8940
TCTGCCTCGA TCTTCTAGTC AACCAAGCGC TGAACCAATG GAAAATATTG CCTCAGGAAA	9000
ACAGGTTACT CAAAGTTCGA CAGCTTTTCGG AGGAGATGCT AGAAGAGCTG TGGATGGCAA	9060
AGTCGATGGT AACTATGGTC ACAATTCTGT CACTCATACA AACTTCCAAT CTAAGCCTTG	9120
GTGGCAAGTA GATTTGGCTA AAGAAGAAAC CATTCGCCAA ATCAATATTT ACAACCGAAC	9180
AGACACTGCC CAGGATAGAT TGGCAAAC TTGATGTCATT CTTT TAGACA GTTCTGGTAA	9240
AGAAATTGAG TGAAAACGTA TAACATCTCC TAAAGATGTG TCAGCACAAA TTACGATTAA	9300
CCATAAAAAA GCGCGCTATG TTCGGATTGA GCTAGAAGGC TATAATGCCC TCAGTCTTGC	9360
AGAAGTTGAA GTTTTCTGCT TTATAGCTAC GAATGCTGAA ACGGCGACAC AAGTTTCTAA	9420
GCCAGTTCAA CCAATCAGTC AGACTCCTGT GAAGGATAAA ACATTGACAA TTCAACACAG	9480
TGGAGCTTAC ATTGCCCCGT ACTCCATAAC TTGGGAAGAA GTTCCAGTAG ATAAAGATGG	9540
AAACCAAGTT GTTCGTAGTC ATTCTTGGGA AGGAAGCGGT CGCAACCAGA CTGCAGGTTT	9600
TGTCCTCAAC CTCCCAATCA AAGAAAATAT GAGAAATCTG CGAGTTAAGA TTGAGAAAAA	9660
GACGGGCCTA CTATGGAATA GATGGCAAAC AATCTATGAA AACAGACCAA TTTTAGCTCA	9720
ACCCACCGT AAAATTACCC ATTGGGGTAC GACATTGAAT TCCAAGGTGA GTGACGATGA	9780
TGTCTTGTA TCTGATGGTA GAATGACACT TAGTTTGTCT AGTTTATAAG AAAGTACTAC	9840
CTGAGCTTGA ATAGGACTCA GGTAGCTCTC TATGAAAGAA CAAAATTAAT ACTCAATGAA	9900
AATCAAAGAG CAAACTAAGA AACTAGCCGC AGGTTGCTCA AAGCACTGCT TTGAGGTTGT	9960

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AGATAAGACT GACGAAGTCA GTCACATATA TAATCCAAGG CGACGTTGAC GTGGTTTGAA	10020
GAGATTTTCG AAGAGTATAA ACAGAAAGGT AGAGCGCGTG TTCTAATTTG AACACGAGTA	10080
GAAAACTTTT CTAAAAACAA AAACGAAAGG ATGGGTAAAC TGTATTGCTG GAACTGAATA	10140
CGGGCGACTC TCCTCTAAAT CAAAATTAAG AAAGGAATTG ACCCCACCCT AAAAGTAGTG	10200
GGAAAAAGAT AGTTGATCTA GCGAGCATCG CTCACTGCGC CCAACTCCTA TTTTCCCTTC	10260
GCTTTTGTAT GGGTTTGTA TCTTTCTCAA TATAAAATAT AAAATAAAGA AAGGTAGAGC	10320
GTGTGTTTTG ATTTGAACAC GAGCGGAAAA CTCGGAAAT AGATAATCTG ACTGAAAAAT	10380
CAGGATTTCT CGTCAGGTTT CTAATTTTCA GTCGTTTTCT TCTCGCTCTT TGTATCATAA	10440
ATTATGTCTA TCCATATTGC TGCTCAGCAG GGTGAAATTG CTGATAAAAT TCTTCTTCCT	10500
GGGGATCCTC TTCGTGCTAA GTTTATTGCG GAGAATTTCC TTGATGATGC TGTGTGTTTT	10560
AACGAAGTGC GTAACATGTT TGGTTACACT GGTACTTACA AGGGTCACTG TGTATCTGTC	10620
ATGGGAAGTG GGATGGGAAT GCCATCTATT TCGATTTATG CGCGTGAGTT AATCGTAGAC	10680
TACGGTGTGA AGAAATTGAT TCGTGTGGGA ACTGCAGGTT CTTTGAATGA AGAGGTTTCT	10740
GTTCGTGAAT TAGTTTTGGC GCAGGCGGCT GCAACCAACT CAAACATCGT TCGTAATGAC	10800
TGGCCACAGT ACGATTTTCC ACAAATGCT AGCTTTGATT TGCTTGATAA AGCCTACCAT	10860
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TACTCAAATT ACTTTGAAAA GAATATCGAG CTTGGTAAAT GGGGAGTCAA GGCTGTGGAA	10980
ATGGAAGCAG CAGCTCTTTA CTATCTTGCT GCCCAATACC ATGTTGATGC GCTAGCTATC	11040
ATGACCATCT CTGATAGCTT GGTCAATCCA GACGAAGACA CAACTGCAGA AGAACGTCAA	11100
AATACCTTCA CTGATATGAT GAAGGTTGGT TTGGAAACCT TGATTGCAGA ATAATTATAG	11160
CCAAAAAGGG GCTCTTTGTC AACTGTAGTG GGTGAAAAA AAGCTAAGCT TGAGAAAGGA	11220
CAAATTTTCGT CCTTTCTTTT TTGATATTCA GGGCGATAAA AATCCGTTTT TTGAAGTTTT	11280
CAAAGTTCCG AAAACCAAAG GCATTGCGCT TGATAAGTTT GATGAGATTA TTGGTCGCTT	11340
CCAGTTTGGC ATTAGAATAG TGTAGTTGAA GGGCGTTGAC GATTTTCTCT TTGTTCTTTA	11400
GAAAGGTTTT AAAGACAGTC TGAAAAAGAG GATGAACCTG CTTGAGATTG TCCTCAATGA	11460
GTCCGAAAAA TTTCTCAGGG TCTTTGTTCT GAAAGTGAAG AAGTAAGAGT TGATAGATCT	11520
GATAGTGGTG TTTCAAGTCT TCTGAATAGC TTAAAACTT GTCAAGAATT TCTTTATTTG	11580
TTAAGTGCAT GCGAAAAGTA GGGCGATAAA AACGTTTATC GCTsArTTTA CGACTATCCT	11640
GTTGGATGAG TTTCCAGTAA CGCTTGATAG CCTTGATTTC ATGAGATTTT CGTTCAAAC	11700
GATTCATAAT TTGAACACGA AAACGACTCA TGGCACGGCT GAGATGTTGG ATAATATGGA	11760

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AACGATCTAG AACGATTTTA GCACACGGAA AAAGCTGTTT AGCCAAGTCA TAGTAAGGAC	11820
TAAACATATC CATCGTAATG ATTTTCACTT GACAACGAAC GGCTCTATCG TAGCGAAGAA	11880
AGTGATTTTCG GATGACAGCT TGTGTCTGTC CTTCAAGAAC AGTGATAATA TTAAGATTAT	11940
CAAAATCTTG CGCAATGAAA CTCATCTTTC CCTTAGTGAA GGCATACTCA TCCCAAGACA	12000
TAATCTTTGG AAGCCGAGAA AAATCATGCT CAAAGTGAAA GTCATTGAGC TTGCGAATGA	12060
CAGTTGAAGT TGAAATGGCC AGCTGATGGG CAATATCAGT CATAGAAATT TTTTCAATTA	12120
ACTTTTGAGC AATTTTGTGG TTGATGATAC GAGGGATTG GTGATTTTTC TTTACCAGGG	12180
GAGTCTCAGC AACCATCATT TTTGAAsAGT GATAGCACTT GAAACGGCGT TTTCTAAGGA	12240
GAATTCTAGA AGGCATACCA GTTGTTCGA GGTAAGGGAT CTTAGACGGT TTTTGAAAGT	12300
CATrTTTCTT CATTAGACTT CCACAATCAG GGCAAGATGG AGCCTCATAA TCCAGCTTAG	12360
CGATAATTTC TTTGTGGGTA TCCATATTGA TGATATCTAG AATCTTGATG TTTGGGTCTT	12420
TAATATCGAG CAGTTTGTG ATAAAATGTA ATTGTTCAT ATGATTCTTT CTAATGAGTT	12480
GTTTTGTGCG TTTTCATTAT AGGTCATATG GGACTTTTTT TCTACACAAA AATAGGCTCC	12540
ATAATATCTA TAGTGGATT ACCCACTACA AATATTATAG AGCCCAAAAA GGAAGCCCTT	12600
TATGAATTGT AGGACTTCCT TTTCTTATCC AGAAATTGAT CTAGCTCTCT CTGATTTCGA	12660
AGAATAGTGA CTTTATGTGA ATATCTTGG CAAAGTTTTT GGTAATTTTC TTTTGTAGTT	12720
TTGCGGACGC CCATCCCAA GAATCCATCT GATAAACTCC CACTCAAAGC GTTCAGGGCA	12780
ATCTACCGCC ATACTTTCTC TGACTTTTCC ACGGTATTTA AGATAACGCT TAAAGGCTCT	12840
AAAGAGACAG GTCAATGGCG AAAAATTGAG AAAGATGATT TGGTCAGCTT CTTGCATTCG	12900
TTCTTGGTAG TAGCACCAAG AATAATTACC ATCGATGACC CAAGCTTTAT GCTTGGTGAG	12960
AAAGTTTTTT ATCTCGGTTA ACATCCATTC GCAGTCACTG TCTTGCCAAC CAGGTTGAAA	13020
TTGGAGTGTG TCCATGTGCA GTTTTGAAT GGAGTAGTAG TTAGATAACT TTTCTGCTAT	13080
AGTTGACTTA CCAGAACCAG AATATCCGAT AATTGCGATT TTCATTTTCT ACCTTTTCCT	13140
ATTTGGAGAC AAAAAACAG CCTCTATGGA CTGTTTCTTA TTTAACAAGT TTAGCTGAAA	13200
GACGAGCTTT ATCGCGGCTT GCTTTGTTTT TGTGAATCAA ACCTTTAGTT TCTGCTTTAT	13260
CGATAGCTGA GCTAGCAGCA CGGAAAAGTT CTTCAGATGG GTTTGCTTCG AAAGCTTTTA	13320
TAGCAGTACG CATAGCTGAT TTTTGAGCTG AGTTCCTTTC GATTTCGTCTA ACGTTCAATT	13380
CAGCGCGTTT GATAGCTGAT TTAATGTTTG CCAATGGTCT TACCTCCATA TTTACTAACT	13440

(2) INFORMATION FOR SEQ ID NO: 129:

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- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 8512 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 129:

CCTTTTTC	AAAAC	ACTAGTCTAT	CAAAAGTAGG	AAAGGGTTTC	AAGAAAATTG	60
ATTGGAAATT	TTTGGAAAT	CATAGAACTA	TTAGCTAATC	CCTAGTATTG	AAAAGACTGG	120
ATAGCTTCTT	TCAGGTCATC	TTGTAAACTA	TTTCTCTGGT	CAAGTTGGAC	ATAGACTTCC	180
ACCAGACAGG	ATCTAAAGTT	GGAAAATTTG	TAAAAATCCT	CCCTTTCTTC	TATCGGAAAA	240
TCAACAGTTT	TTATCCAAGA	AGCTACTTGT	TCTTGCTCCA	ACTTCCCTTG	TAAAAATAGGT	300
TCATAGATCA	CTCTTGCTAA	ACGCCAATCC	TCATCATCTG	TAAAGCGAAT	CGACATTCTT	360
TTAAATAGTT	GGCCAAGTAT	ATCAAATACT	TCATGAACTC	TGTTTTTAGG	AAAGTCTGGA	420
TGACAAACCA	CCTCTGTCAG	TAAATCGGCT	CCATGTGCAA	AAGCGTGAAC	CCAACCATAC	480
TGACTTGAGA	AACCCCTTGT	ATCCTTTTCT	TTTGAAAGAT	AGTGCAAGCC	TTGATTTAAA	540
AGGACATTAC	GAATTCTCTG	AGAAGGATTT	CCCAAATGAT	CAAACAACCA	CTGGATTCTT	600
TCCTGGTTAT	AATTTGGTTT	TTCTTCTGCT	ATTTTTCTTA	GTAAATCTTG	ATACATGGTC	660
AATACCTCTA	CATTCTAGC	AACTGTTCAA	AAAGGCAGTC	TTAAATGACT	CAATATTGAA	720
TTCTCAATTA	AATACAATCT	GATATAAAAT	GACGTAAATA	ACTATCAATA	CCAGTTCTAC	780
AGTAAGTTCA	AATTTAACAT	CACGACCTTC	AACGACATTT	TTGAAAATAG	CTACAACATA	840
GACAAATAGA	ATGACGCTTA	ACAAGCCCAT	AAACATCATT	CTAAAAAATT	TTTCTATTCC	900
CCTACTCTCC	CAACTCAGCA	CTATAGGAGA	TAATCTGGTC	AACTGTGTCA	GACAAGAATT	960
GGATGGTATC	ACGGAGTGGT	TTGTCTGTTG	AAATATCAGC	ACCGATAATC	ATGGCTGACT	1020
CAAGTGGTGT	CTTGCTACCA	CCTGATTTGA	GGAGATTGAG	CCAGTCTTCA	GCTCCAGTTT	1080
CAGAAATGTTT	TAGATGAAGG	TAACCAGCAG	TCGAGATAAC	TAGTCCTGCT	GAGTAAGTGT	1140
AACTATACAA	GCCCATATAG	TAGTGAGCTT	GGCGCATCCA	AGTCAGAGTT	GCATCATCGT	1200
CAATTTCAAT	AGCATCTCCC	CAGAAATCCG	TCAAAACTTC	CTTCATAATG	CTGTTGAGCT	1260
TGCTTGCTCC	AAAGGTCTCC	CCTTCTTCAA	TCAATGTATA	CACCTTACGC	TGGAAGGCGG	1320
CTTCCAAGAG	GTGGGTGATA	AAGTTATGGA	AGTAGGTGTC	TGTCAAGCGA	TGAGCCAGAG	1380
CGAAGCGTTT	TTGACGTGGG	TCATTAGACT	GGTTCTCCAA	GTAATCACTG	AGTAGCAATT	1440
CATTGAAGGT	TGACGGTGCT	TCAACATAGT	AGGTCGACAT	ATGGGCATTG	AAGTAACTTT	1500

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GATGATTGTC TGAAAAGATG AATTGACCAG AATGCCCCGAT TTCATGAATC AAGGTATAGA	1560
CATCGCTCAA ACGGCCTGTC CAGCTCATGA GTACATAAGG GTGTACGCGA TATGGGTCCG	1620
CCGCATAACC ACCGGAATCC TTGCCACTGT TAGCAGCAAA GTCCACCCAG CGCTCTTCTT	1680
GGTAACGAGC AACTTCCTGA CAATATTCTT GCCCCAAAGG TTCTACCGAC TTCATGACCA	1740
AATCATAGGC ATCGTCAATA GTCACCTCAG GATTCAGGGC GCTGTCCAAG TCCAATTTC	1800
AGTCTGCAAA GGTCACTTTT TCAAGACCAT TTACCTTGGC AACATGCTTG AGGTATCTCT	1860
GAGCGACTGG TGCAAAGTCC TTCATGATGA GGTCAATCTG GCGGTCAAAC ATGACACGGT	1920
CCACTTCTTG TTCAGCTAGA AGATAGTCAA AGACAGAGTC GTATCCCTTC ATATCAGCCA	1980
AGAGTTTTTC AGACTTGACC TGAGCCAGAT AGGCTGCTGC AGCCGTATTT TGGTGCTTAC	2040
GAAGTCCCTC TGAGAAGGAA CGGAAGGATT TCTCACGAAC CTCAGCATCC TCATGGTTTT	2100
GGTAGAAATT CTCATAGGTC ACAAAGCTGT TTTTGTAGGT CTTGCCATGG GCTTCAAAGT	2160
CAGCCATTTT AAAATCCCCA GCTCGCATCT TAGTATAAAT GTCCTGCGGA CTGTAGAAAA	2220
CTTCACCGAG ATTTGTCAAG GCCTTCTCCA CATCTGCCCC TAAGTAGTGG GCTTTTTTGA	2280
TTTTAGCCTG ACGAATGGCA GCTGTTAAAT GTGGCAATTT ACCCAAACGG TCCAAGACTT	2340
CCTCATCTGC TGCCACCAAG GCATCGTCAA AGAAGGTCAA GGCTACGCTG GCATCTGTTT	2400
CAAATTCAT CCCAGCTTG GCAATATTGG CAAATTCGTC ATTGCTATAG TCCGTCGTCT	2460
GAGGCATAAA ACCATAGTTG CCAATATGGC TCATCTGAAT GTAGATCTGT TCCAATCCG	2520
CAAAGGCCTT CTCGAAATCC TCAAAAGTGT GAAGATTGCC CTTGTAATCA CGGCTAAACT	2580
GGTTGATGTC TTCGCGAGCT TTCTCGATTG CACGCAAGAA ATCCTCACGG TCTTGGTATA	2640
GGGCTGTTAA GTCCAGAGT TCCTTCTCTG GAAATTCTGA ACGGTGTTTT TGTTCCATTT	2700
TCTTCCTCTT ATTTCTCTAA TTCTACTAAA AACTAAGGG CTGATAAAGC GTAAAGCGGT	2760
GCTGTTTCTG CTCGAAAAT ACGAGGACCT AGGCCTGCCA AAACGGCTCC TTAGCTTCA	2820
AAACTTTCGA TTTCTGCAGG TGAGAGACCG CCTTCTGGAC CAAAGATAAA GAGCAGTTTG	2880
GCTCCTGTTT CAAGACCAGT GACTGCTTGC AGAAGCGCAG CGGCTTCTCC TTCTTTAGCT	2940
GATTCTTCAT AGGCTACTAT GATAGAGTCA AACTGGTCCA GCTGAGCTAG AAAATCTGCT	3000
TTTTTCTCGA AAAGTTAAT ACTTGGTACA ATATTACGCT TGCTTTGCTC GGCTGCTCCA	3060
AGGGCAATTT TTTCTAGTTT TTCAACTTTT TTACCCAATT TCTTGCCATC CCACTTGCCA	3120
ACTGACCAGT CTGCAGGAAA GGCCAGATT TGGCTAGCCC CCAGTTCGGT TACTTTTTGA	3180
GCGATGAACT CCAGCTTGTC TCCCTTGGGA AATCCAGATG CGATGGTCAC TTGGACTGGT	3240

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AGTTCCACAT	TGTCATTAA	TTCTTGGACC	AACTCAAAC	GACGATTTTC	CATATCCAGC	3300
ACGCGCGCCA	AGCGCTTGAT	GCCATCATCA	AAGACTAAGG	TAACCTCATC	CTCTTCTTTC	3360
AAGCGCATAA	CCTGAAACAT	ATGCTTACTG	GTTTCCTTGT	CCTCGATAGT	GACAGGAGAG	3420
ATAGCACTGC	CTTTTACAAA	ATACTGCTGC	ATGCTAGCCT	CCAATCACAC	CAGAGATATC	3480
CTTGGTMTTC	TTAAAGACAC	AGGTATTCCA	TTCCCCTTGA	ACCATGTGAG	TTTCGAGGAA	3540
AAATCCAGCT	GACTCAGCCG	ACTGGCGCAC	CATGTCCAAC	TTGTCCCTGA	TAATGCCACT	3600
CATGATCAGG	TAGCCTTCAT	CCTTTACCAA	GCGATAAGCA	TCGTCTATTA	GATGAATGAG	3660
GATATCCGCC	AAGATATTAG	CCACAATCAC	ATCTGCCTCA	ATTTCACAC	CCTTAAGCAA	3720
ATCTCCAGCC	GCTACATGGA	TATTTTCCAT	GCCAGGGTGT	AGCTCAATAT	TTTCTGAGC	3780
CACACGAACC	GCCACATCAT	CCAGGTCATA	GGCGAAAAT	TCTTTAGCCC	CCAGAAGCGA	3840
GCTGGCAATA	GAGAGAACCC	CTGAACCACT	CCCCACATCT	AGCACCGTTT	CGCCACCACG	3900
AAGAACCTGT	TCCAAGGCAA	AAAGGCTCAT	CTTGGTAGTT	GGGTGGGTTC	CAGTACCAA	3960
AGCCATGCCA	GGATCCAGCT	TGATAATCAT	TTCCCCCGCA	GTGCGCTCAT	AGTCTGTCCA	4020
AGAGGGAACG	ATGGTCAAAT	CATGAGTGAT	ACGAGCAGGT	TCATAGTATT	TCTTCCAGTT	4080
GTCTGCCCAG	TCTTCTCAG	CCAAGGCAGT	CGTACCTATT	TTTAACTCTC	CCAAATCCAT	4140
AAAATCTGTC	AATTCTGCTA	GACGAGCCTG	CAAATCCGCC	TCAACCACTG	TCACATCCAC	4200
CGTGTCAGGG	TAGTAGGCTG	TCACTACGAT	TTCTTCTTGC	TGCTCCACCT	CTGGGAAAAT	4260
CTCTCCAAAG	CGGTCCACAT	TTCCCACATA	GTCCATACTG	TCTTCGATTG	CGACTCCTTG	4320
CGCTCCCAGC	TCAATCAAGA	GATTGGAAAC	CAACTCCTCT	CCCTCACGCT	TCACTGTAAC	4380
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GGGCGGGTTC	AGTTTAGAAA	TGTAACGTAA	CCATCCTTTC	TAATCACTTA	CTTTTAAATA	4560
ATCTTTTAAT	CTCTCTTGCA	ACTGAGGCAC	AACTTGACTG	GAACTAAGAA	ATTCCTCAAC	4620
ATTCATCAGC	TGATAGCCCT	GTCTTCATC	TCCGAAGATG	ATATTGTCAA	ATTGTTCTTG	4680
TCTTAGCTGA	CCAACCATAA	AGACCGATTT	CTTGCCTTTA	AAAATTACGC	TAGGATAAAT	4740
CTTGCTCCAA	AGCAGACAGT	CTTCATCTAA	ATGAATTCCC	AGTTCCTCAT	AAACTTCACG	4800
CCGAGCGCAT	TCAAAAGGGC	TTTCGTCCCC	TTACGGGCA	CCACCTGGCA	GTTCCACAT	4860
ATTGGCCCAG	GGAATACTTG	CCTTATCATC	GCGTAAGATA	GTCAAAAGCT	TATCCCCACA	4920
AAACAAAGCA	ATCTTGCAAC	CTGTGAAATC	AGAAATTTCT	AGTTCCATCT	TCAGTTCCTT	4980
CTAACATTTT	CTTTTCCAGC	TCGGCTAACC	AGTTTTCATA	ATATCTTTTC	TCATCCCTCA	5040

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ACATTCGACT ACTATCCATT TTCTGTCTAG CAATCTTGAG AGCCTTACGA GTTCGATCTA	5100
CATCTTTCTT CACCTTTAAT TGATACCAGG CTTGTATCAC TTGAAGATTG GACAGTTTGA	5160
GAGACAGAAA CGATTTGACC TGTCGAATAC TAGCATATTG CTCCGCTTGC TCAAAATCTC	5220
CTTCCAACAA GCGGATATGA AGCAGGGATA GTTGGGCAAC TGTCTGCATC ATCGGAGTAG	5280
TTGTCTCTC AAGTAATGCT TGAAACTGCT GTTTAGCTAC TTCTTCCTTC CCTTCCAAAA	5340
TGGAAACTTC ACCTTGCATA CCTAATACAC CATCCGCAAA ACTCCCTCGT GCATCCTCAG	5400
GAACTGCTTG AACAAAGTCT TTCAAATCAT ATTCTTGAGG AGCTAGCAAG GTCTGGGCAG	5460
AATGTCTCAA TACCAGGTAG GCGTATTTGG TATTTTCAGG GTGTTGTAGT AATTCCCAAA	5520
TTTTTGCTCC ATCGGTGATG TCGACTGGCA AAATGTTATT TAGGAAGAAA GATAAATTAA	5580
GAAAAATCCA AGTCCCTGCA AAATACCAGC TTCTTGTCAA AAATCCAAAC AATATCGCCA	5640
ATAATATCAA GCCGAGATGA ACCATCAAGC CTCCTGAAAG CATCAGGATG ATTCTTTGAT	5700
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TACTAAGATG AAACCTGCCT GACTTTTTGG TCAAAATAAA ATGTCCTAAT CCAAAAGCCA	5820
CCAGCCGATA GCCTGTCAAG TAGCCACAAA AAGCATGACC CAGCTCATGA AGAATAAAGA	5880
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ACCCCAACTC TGCAAATGCG ATTGTTCCAC AAGCAAAAGC TAGCATAATA AAGACAACAG	6000
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ATCTTGATA AGGATAAAAT TCTCCCTTTT CCAAGCCAAT TTTTCCTTCT TCAAAGACTT	6120
CTTGGTTCCA TTCCATGACA AATTCCTCTG CTTCTGGGTC TTCCAAAAAG TCCATGAGGA	6180
CATCTAGCCC AACCTCAGCA GTATCTTTAA GGAAAAGCGC AAAATAAGCT AAAAATTCAC	6240
GGGAAAATCC TTTTTTAGGC AGGTAAGGAA TAACAGTCAA ATAGTCTTCC TCATTGACTG	6300
TTGACTTGGC AGGATTGTAG AAAAGGACCG CTTCTCATAA AAGAAATGCA TCTGATGAAA	6360
CCTCTCCGTC TTCATCCACC ATCTCCACAC CGCAGCATTT TCGGCTTCCA ATAGAAAACT	6420
CACTTCTACC GCATGGTTGC GTTGTGCCA GCTAATCTCA AAGTCAAAGG GAAAGTTCTT	6480
GTCCAACTCT TCCTCTAAAA TATCTAAAAA TCCGTATGTT GCCATTTTGT CCTCTTTCTA	6540
TGCGACTCTT TAATCGCCCC GATTGCTCGG AAATATGCTA AAATAGATAC TACCATCTTA	6600
CCACAAAATT ATTTTATGTC CTAATTATAC CATATTACCT CATTTAAACC CTTGGTATCA	6660
GTGATTTTCT TAAAAGTCTG ATTTCTTCAT TTCTCATAAA AATCAATATA AAAAGCCCTC	6720
GAAAGGGCTA ATAAATCTAT AAAATCAATA GGCGAGTAAC TAGCACAAGT GGACGTGCTT	6780

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TTTTATTGAC TATTACCACG ATACCACGCT TAATCTTAGG CTTGAACTTT CTTATCTGCA	6840
ATAGCGTCTG TCAAAGTCTG AGAAAAGTTA AGCCCCATTT CTCGTCCCAA CTTATCTGCC	6900
CATTTTGGTA TGGTCAAAGT CTTTTTAATG GGTTCCTGAC TTCCTAGGTA TTCTGATACA	6960
TCAACAGATA CCATAGAAAT AAAAGATTTA TCAAGGTCAT AGGTTGACAC GAAATCTTCA	7020
TCATCTTTAA AAGGATCATT ATCAATTAAA GACAAGCTAT TGATATCTGA TGGCTGAGGT	7080
AACTCTCCAT CACTCTCTAT CAAATCTGCA ACAGTTATCC CTAGCCACTC CGACCCCATATA	7140
GCCAAAGCCT CAGAAATCCC CTCTCCTTGT GTAGCTGAGT ATTCAAAATC TGGGAAATGG	7200
ACAAAATAAG TCGCTTCTGT TCCGTCTGTG TCGTCATAAT AAAATAAAGC TGGATACGTA	7260
ACTAACATTT CACTACCTCC ATATCAAAAA GCAGGGACTG AATTTTACAA CCCAGCTTGC	7320
TTTCTTATCC CTCTTTCAGT GTACTTATTC AGCTCACCAT GAAGGATTGT GATAGGTCTT	7380
TCCCCTTGCT TTTCCATTTT AATATGGGAG CCTTTACCGC CTCTAGTCTT TATCCAACCA	7440
TGGGCCGTAA GGAGTTTAAC CATCTCTTTT TGTGTCATAG GCATAGCGCT TTTACCTCCT	7500
GACAACACCA TTATAACACG TGTACACGT ATTGTAAAGG AGTGATACTT ATTATCTAT	7560
TATACATAAA AGCCCCTAGA TGTGGTTCTA AGGGAAGCCA ATTTATTCAT ACCTATTTTT	7620
CTAATGAGTA GTAAAACTG CTTCTTTATC GAGCAATCA TCATCTGTAT AGTCAATTGT	7680
AAAAGTATCT CGATCTAAGA CAGATTGAGG CGGAGTTGAA TGAATCATAG GAACACTGCG	7740
TACTCTATAT TTTTATCTC CAATTTTAC AAAGTATAC TCTTCGAAAA TCAAATTCAA	7800
ACCACGTCAA CGTCGCCTTA CCGTACTCAA GTACAGCCTG CGGCTAGTTT CCTAGTTTGC	7860
TCTTTGATTT TCATTGAGTA TGATTAATCT TCAAGTCTTC GAAATCAGGA TTTTCAACAG	7920
TTATTACAAG GAGGCGATTT ACTACTTCAA AAACATCAAT TATTCTATTT TTCATATTTT	7980
TTCAACCCAT TATTAGAATG AACTTCTTGG TAAGCAAAAT CAAGTTTAGA TTTAATGTTT	8040
TCGTACAAAT CTAAATCTC TTTTGGAGTA TCTTCCCGGA AGAAAAGTTT TCTTTTCCCT	8100
GAAATAACTT GATCACTAAG AATCCAATGA CGAATTGTT TTGTAAAAAT CAAAATTTCC	8160
TGACTTGGTA GTTCCATCAT TTCCATTGCT TATCACCTCT CTTTTCATTA TAGTTCATAC	8220
AATGACATTC AGCAATATTA TTTCTCAAGT CAGCACTTCC ACTTCTTTAG GCTCAACTAT	8280
CCTATTTTGA GCTTTAAGGA AAATCAAATC TCTCATGCTG ATACCTCTCC TCATTAAATT	8340
AAATAGTAAA AAAGATTCTA TCTCACTCCC TGATTATTAC AAAACCATTG AAATATCACA	8400
ACTAATAGGC TAGAATGGAC ATAGTAAGAT ATAGTAGATG AGTCATTCTA CTCAAATCCA	8460
CGTTAGAAAG GACTGCTATG CCAGACAATC TCGCCGTTCTG CATGCGCCCG GG	8512

(2) INFORMATION FOR SEQ ID NO: 130:

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(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 2869 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 130:

CTCGTTTCAA GGTGAGTCT CTTGCAAATC TTGTTTCGCGT TCTTCCTTTT GCCAAGGCAT	60
CTCTCCCATG GTTGGTGCCA GCCATTGTTG GAATCTTGCT CTCATTGGTT CTACCAAACA	120
AGCAAGAAAG CGATGTTTTT GAAATGGAAT AATCACTTAA ATCACTTTTG TAGCCAAGTC	180
TACAGGAGTG ATTkTCTTTT TTTATCCGAT GATAAATGTG TTATAATAGG TAGCGAAAGA	240
GGTGAAGAAA TGAATCAAAC AGTAGAATAT ATCAAAGAAC TGACAGCCAT TGCGLCGCCA	300
ACAGGCTTTA CTCGTGAGAT TGC GGACTAT TTAGTCAAGA CTCTAGAAGG TTTTGGTTAC	360
CAGCCGGTTC GCACATCCAA GGGCGGTGTC AATGTAATA TTAAGGTCA AAATGATGAG	420
CAACATCGCT ATGTGACTGC CCATGTAGAT ACGCTTGGTG CTATTGTCCG TGCTGTCAAA	480
CCAGACGGCC GTCTCAAAAT GGACCGTATC GGTGGCTTTC CTTGGAACAT GATTGAAGGA	540
GAAAACTGTA CCATTCATGT GGCTAGCACA GGTGAAAAAG TATCAGGAAC CATCCTCATC	600
CACCAAACCT CTTGCCATGT CTATAAGGAT GCAGGAACG CAGAACGCAC GCAAGACAAT	660
ATGGAAGTGC GTTTGGACGC CAAAGTAACT AGTGAAAAAG AAACCTCGTG TCTTGGCATT	720
GAGGTCGGTG ATTTTATCAG TTTTGACCCA CGAACTGTCG TGACAGAGAC AGGTTTTATC	780
AAGTCTCGCC ATTTGGATGA CAAGGTCAGT GCGGCGATTT TGCTCAATCT CCTTCGCATT	840
TATAAGGAAG AGAAGATTGA ATTGCCCGTA ACAACTCATT TTGCTTTTTC AGTCTTTGAA	900
GAAGTGGGAC ACGGTGCAAA CTCTAACATT CCTGCTCAGG TAGTAGAATA TCTGGCTGTG	960
GATATGGGAG CCATGGGAGA TGACCAGCAA ACAGACGAAT ATACAGTGTC TATCTGTGTC	1020
AAGGATGCTT CTGGACCTTA TCACTATGAC TTCCGTCAAC ATTTGGTGGC TTTGGCGAAA	1080
GAGCAAGATA TTCCATTTAA GCTGGATATC TATCCATTTT ATGGTTCGGA CGCTTCAGCG	1140
GCTATGTCTG CAGGGGCAGA AGTCAAACAC GCCCTTCTCG GTGCTGGTAT AGAGTCTAGC	1200
CATTCCATATG AGCGTACCCA TATTGACTCG GTGATCGCAA CAGAACGAAT GGTGATGCT	1260
TATCTTAAGA GCACGTTGGT GGACTAATAT GTGCCTTATT TGTCAGAGAA TTGACCTCAT	1320
CAAGAAGGAA GAAAATCCTT ACTTTGTCAA AGAGTTGGAA ACAGGCTATC TTGTGGTTGG	1380
AGACCACCAG TATTTTGAAG GCTATAGTCT CTTTCTAGCC AAGGAGCATG TCAGCGAATT	1440

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GCACCATTTG AAAAAGGAGA CAAGACTCCG TTTTCTAGAA GAAATGAGTT TAGTCCAAGA	1500
GGCAGTTGCC AAGGCCTTTG CTGCTGAGAA AATGAATATC GAACTGCTAG GAAATGGCGA	1560
TGCTCATCTT CATTGGCATC TGTTTCCACG ACGGACAGGT GATATGAATG GTCATGGTCT	1620
CAAGGGTCGT GGACCAGTCT GGTGGGTTC CTTTGAAGAA ATGACAGCAG AAACCTGCCA	1680
AGCAAAACCG GATGAGATTA AAAGATTAGT CAAACGTTTA TCGTCAGAAG TAGATAAACT	1740
ATTAGAAATA AAGGAGTAGA AATGAAGAAA AGATACCTAG TCTTGACAGC TTTGCTAGCC	1800
TTGAGTCTAG CAGCTTGTTT ACAAGAAAAA ACAAAAAATG AAGATGGAGA AACTAAGACA	1860
GAACAGACAG CCAAAGCTGA TGAACAGTC GGTAGTAAGT CTCAAGGAGC TGCCCAAGAG	1920
AAAGCAGAAG TGGTCAATAA AGGTGATTAC TACAGCATTC AAGGGAAATA CGATGAAATC	1980
ATCGTAGCCA ACAAACTA TCCATTGTCT AAAGACTATA ATCCAGGGGA AAATCCAACA	2040
GCCAAGGCAG AGTTGGTCAA ACTCATCAA GCGATGCAAG AGGCAGGTTT CCCTATTAGT	2100
GATCATTACA GTGGTTTTAG AAGTTATGAA ACTCAGACCA AGCTCTATCA AGATTATGTC	2160
AACCAAGATG GAAAGGCAGC AGCTGACCGT TACTCTGCCC GTCCTGGCTA TAGCGAACAC	2220
CAGACAGGCT TGGCCTTTGA TGTGATTGGG ACTGATGGTG ATTTGGTGAC AGAAGAAAAA	2280
GCAGCCCAAT GGCTCTTGGA TCATGCAGCT GATTATGGCT TTGTTGTCCG TTATCTCAAA	2340
GGCAAGGAAA AGGAAACAGG CTATATGGCT GAAGAATGGC ACCTGCGTTA TGTAGGAAAA	2400
GAAGCTAAAG AAATGCTGC AAGTGGTCTC AGTTTGAAG AATACTATGG CTTTGAAGGC	2460
GGAGACTACG TCGATTAATA CTCTTCGAAA ATCTCTTCAA ACCACGTCAG CGTCGCCTTA	2520
CCTACTGACT GCGTCGGTTC TATTCACAAC CTCAAAACAG TGTTTGTAGT CGATTCTGCA	2580
GTTTTATCTG CAACCTCAA GCTGTACTTT GAGCAstGCG GCTAGCTTCC TAGTTTGCTC	2640
TTTGATTTTC ATTGAGTACA AAAAGTAAAC TTTTCTCTTG CAATTCCAGA TAAATAGTGT	2700
ATAATGGATG GGTATGTGAA AACATACTT GTGGGAGGTA AAAATCTCTA ATTACCGCCA	2760
AAACCACAAA GGAGGATTTA AAAATGGCTA AAAAAGTCGA AAAACTTGTA AAATTGCAAA	2820
TCCCTGCTGG TAAAGCTACA CCAGCTCCAC CGTTGGACC TGCTCTTGG	2869

(2) INFORMATION FOR SEQ ID NO: 131:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 6186 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 131:

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CTGAATCCCT TATAGGAGTC CAGTAACTTT TTAGCCTCTA CTTTGCCTTC ATAGGCAGCT	60
TCAACATCAT TAAAAAAGA ArGCACTGAA GCAAGTTCTT CAGTGCTCCA CGACAAATCT	120
AGTGGGTAAC TATACTGTTT GTTCATTAAC TAATACCAGC TCTCATTCTT GCTTCTTTTA	180
GTTCTTGCTT ACGATAACTA CGAGGGAGAA AAGCACGAAT CTCATCTTCA TTAAAACCGA	240
TTTGACATACG CTTGGCATCA ATAATAATTG GACGACGCAA AAGACTAGGA TACTGCTCAA	300
TCAAATGAAG CAATTCCGAT ACCGAAATAC TCTCTACATC AATATTCAAT TTTTGAAAAA	360
TTTTTGAACG AGTTGAAATG ATGTCATCAG TACCATTTTC GGTCAAGGAA AGGATGTGTT	420
GCAATTCTTT TCTTGTTAAA GGACTGGTCA TAATATTGTG TTCCACAAAG GGAACCTATG	480
TTTTTCTAAC CAGGCCTTAG CCTTACGACA TGATGTACAG CTCGGTGATA GAAATAGTGT	540
AATCATGCTT TTCTCTCTT ATCTATACTT TGCTACTTCT ATTATACAAA AAAATAAAGC	600
GCTTGACTAG GGATTTTTAG AAAAAAGCC TATTTTTTCA AGAAAAATAG GCTTTTTGCG	660
AACGATTGAC ACAATTGGAT TTGGTTAATT CACTCTTAAC GATGGTTTTA AACGATATAT	720
ATTTTTATAT ATGTAAATTA AAAACATCTT TCCTTTCCT TCCTACGACT TTTCAGATAC	780
AGATAGCCAA AGAAGTTTTC ATAGAGGGCA AAAAAGAGGA GGAAGGCATG AAGAAAGAAG	840
GTCTCTGGCA AAATCATAAT AACAGGATCC TTGGCTGGAT CAAAAGCCA GGTATCATCT	900
CCCACAAAGA GAATTTGATG GAAAAGAGTA AAGAATTGGT CAAAACCAAT CAAAACCTCC	960
CCAAGTCCAA TCATCACAGG TAAGACTACT AGAGCCAGGA GACTTTTTTCG ATAAAGAGAC	1020
AAAAAGTCCT TTTTCACAAT CCTATTGACA AAGACATAGA AACTTGGCAG TGCTACTAGA	1080
GCTACTAGCT GAACCAAATG AAAGAGATTC TTGACCACTG CGAAATGGTG CAGACCAGCT	1140
GCTGACGAAC GAAAATCAGG CATCTGTAAG ACCTGACTAA AAGGATTGGT CAGATAATTC	1200
ATCAAGATAT GAAAATTGTA TTGAATGGTT TCTGGTTTTA GATAGACTCG ATTCTGTTAAG	1260
TTTAGCCACT GAATCTCCAT AGGATAGAAA ATCCAAGCCA GATAAATGGT CAGAAGGATG	1320
GAGAGGGAGA GGAGAAAGAG CATAGAGCCC CAAAAGATCA ATTTAGTTTT CATCAAAATC	1380
CCACTCCGCA AGGCTAGAAA CCACATGTGT CGGTGCGATT GGCAGGCCAG CTACTTCTTC	1440
TGCCTTAGTA AAACCTGTCG TCACCAAGAG CGTTGGAATG CCATTGTCAA TCCCAGCCCG	1500
AATATCAGTC AAATAATTGT CCCCAACCAT GATTAATCTT TCACGTTCCA AACCTAAGTG	1560
CTCAACCGCC TTGTCCATAA TGATGGCATT TGTTTTCCTG ATATAAACCG GCTTCACTCG	1620
TGTCGCTACT TCAAGCAGCG TAATCAGTGA GCCAGCACCT GGCAAAAGAC CGCGTTCCTG	1680
CGGGATGTTG AGGTCAGGAT TGTTCCGAT AAAATGGGCA CCCTTTTGAA TAGCAAGAGT	1740

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TGCTGTGGCA	AATTTTTCAT	AGTCGACTTG	CCAATCCAGA	CCAACCTACCA	CGTAGGCAGG	1800
TTTTTCCTTG	TCTTCCACAT	AACCAGCCGC	CTTGATGGCT	TCCTTGAGTC	CTGCTTCTCC	1860
GACGACATAG	ACGGTCTTTT	CAAGCCCCAA	ATCATTCATA	TAGTCGATGG	TTGCCAAAGT	1920
CGCTGTGTAG	ACAGTCGATA	GGGGCGTATC	GATATTAAAA	TTCTGAGCCA	ACATCTCCTT	1980
AACACTCTCT	GGAGTGC GGG	TTGTATTGTT	GGTTACAAAG	AGATAGGGAA	TGTCCCGCTT	2040
TTGCAATTCA	TGAACAAAAG	TCTCTCCAGC	AGGGATTCGG	TCTTTCCCTT	TATAAATGGT	2100
TCCGTCTAAA	TCAATTAAAT	AGCCTTTATA	TTTCATCTAT	TTCTCCCTAA	GCCTTTTTTA	2160
TTTCTTGCCA	AGTAATGATT	GCTTGGGCAT	TGATAACCCC	ATCACTTGTA	ATTTTCATGCT	2220
TGCTTTCCAG	TCCAGTCCGT	TCAACAGCCG	ATGTAATCAC	CCCACCTGGT	CGAACTTCCT	2280
TGACATACTT	GAGGTGATT	TTCTTGGGAA	TATAGTGGGT	CAAAAATCC	GCTCCCATGA	2340
CCTCAAAAAT	CCAGTCCAAG	TATTTACTGT	TATTGACATG	ACCATTTCATA	TCCAAGTCGT	2400
AAAAACGAAC	ATGGTAATCC	TTGCTGATCG	GTCTTCCAA	GGACTCATAC	TTCGGTCCAC	2460
GGATAAGTTT	TTTATCAAAA	TCAGACTGGT	AAGGAGCCAC	AATCTCAGGT	TCAACAACAT	2520
GGACTTTTCG	ACTGTCGCGG	TCCATGAGAA	CAAAGTCCG	CATCATGTGG	ATGAGCTCCT	2580
GCTCCGCTTC	ATTATAAATA	GTAAAGCGAC	GGTAGCAAAA	AAGTCGATTG	TAGCTCAAGG	2640
CTTCCGTTTC	GATGGTAATT	TCTTCCGCAA	AACGAGGCAA	ACGAACCACC	TCAATATCAT	2700
ATTCTACGAT	AATCCAGACC	AGATTATATT	CTTCCAAAAT	GGCCTTATCA	CTAACTCCCA	2760
GTTCAATCGA	CTGCATCCCT	GAAACTTGCA	GTGACAGCAA	AATCACATCT	GGAAGTTTGA	2820
TATGACCGTT	CATATCAGCC	ATATCAAAAG	GAATTTTCAT	TTTCATTTGA	TAAGTTAAGC	2880
CCATGATCCT	ACTCCAAAAT	AAATCGTTCT	GCTACAGTAT	CTCCCCAAAA	GAGACCTCTC	2940
TTTGTCATGC	GAACGTGGTC	ACCCTCAATC	TGCATGAGGC	CTTGTGTAAC	CAAATCTCTG	3000
ACAATTTCTC	CATAAAGTCC	AGCAAAAGAC	TGTCCAAATT	TTTCCTCAAA	TCGCGCCATG	3060
GAAACCCCGG	ATTTCTTGCG	GAGTCCCAAG	AACATTTCTT	CTTCCATTTG	CTCCTTTTGA	3120
CTCAGGTGAT	CTTCTGTAAT	ACAAGCATTG	CCTTCCTCAA	CCGCACTGAG	ATAATGACGA	3180
ATGGGACCAT	GATTTTATA	GCGTACTCCA	TTGACATAAC	CAGATGCCCC	TGCACCAATA	3240
CCATAGTATT	CAGCATTGTC	CCAGTACATG	AGATTATGAC	GACTTTCAAA	ACCGGGTTTG	3300
GAGAAATTAG	AAATCTCATA	ATGCTCAAAA	CCCGCTCGCT	CCAGCTCTGC	AATGATGTAC	3360
TCAAACATCT	CCGCTTCTAG	TTCCTCCTTA	GGCAGAGGCA	ATTTCCACG	TCGCATCCGG	3420
TTCATAAAGA	CCGTATGGTT	TTCTAAAATC	AAACTATACA	AACTCATGTG	GGGAATATCC	3480
AATCCAATGG	CTTTAGCCAC	ATTTTCCTTT	ACTTGCTCCA	TGGTCTGACC	AGGCAGAGCA	3540

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TAAATCAAAT CAATGGAGAT ATTGTCAAAA CCAGCCAGTT TCAGGCGATC GATATTTTCA	3600
TAAATATCCT TCTCCAAATG ACTGCGCCCA ATCTTTTTCACATCTTATC ATCAAAGGTC	3660
TGGACACCTA GCGAAACACG ATTGACAGCC GAATTTTTC AACAGCTAT CTTATCCGCA	3720
TCCAAATCGC CTGGATTGGC TTCAATGGTC AACTCTTCCA AGACAGACAA ATCCAAGTTT	3780
TTAGTCAAGC CATTCAGTAA CACCTCCAGT TGGGAGCCG ACAGGGCTGT CGgTGTCCA	3840
CCACCGATAT AAAGGGTTGA CAACTTTTCA ATATCATAAG AACGAACTC TTCCAGCAGA	3900
TGCTCTAAAT AGCTGTCGAC TGGGTGATTT TTGATGAAGA CCTTTGAAA ATCACAATAA	3960
TAACAAATCT GGGTACAAAA TGGGATGTGC ACATAGGCTG ACGTTGGTTT TTTCTGCATA	4020
GTAATTATTA TACCACAAAG ACTAGATTCC AGATAAAAAT CACCATCCCC AGATACATAG	4080
TCCGTCCGGA GATGGTGATG GTTTATTCTT CTGTTATATC AATCACAATC TCTTCTGAGT	4140
CATCAAGAGC TTCGGCTTTT TCTTGCCATT GCTCCTTGAG ATTATTTAAT TGATTTTTTG	4200
ATGCTTCTGT CGCTTGAAAA GCATAGGATT TAGTTTGAGC AAGTATACTG TCCACAGTGA	4260
TTTCACCTGA CTCAACCTGT TCTTTTGTTT TCAGAACAAA ATCTGTAGCC TGCTCCTTAA	4320
CTTCTGTCTAG TTTTTCACAG ACTTGCTCCT TGGCATACTC CGGATCTTCT CTCAAATCAT	4380
CTAGAAAATC TTGAGCCTGA CTGCAAACTT GTTTGCCCTT ATCACTTGTT AAAACAAGG	4440
CAAGAGCTGC ACCTGAAACG GTTCCTAAAA GGATTGAGGA TAATTTACCC ATAAGGATTC	4500
TCCTTTTTTA TTTTGTGAAA AATTACTTG CAAGACGAAG AGCTGACAGA CTTGCACCAG	4560
TCTTGAGTGT TTTTGAACCA GCTGATGAAG CTTTCTTGCT CAAGACACGC GCATGGTCAT	4620
TGAGGTCTGA AACAGATAGA GATAAATCTG CAACAGCACT GAAGAGTGA TCAATCGTAG	4680
CCACCTTGAC ATTGATATCA TCTGCCAAGA CATTGACCTT AGCCAACAAC TCATTGGTGT	4740
GATGCAAGGT CACATCCACA TCTGAAGTCA AGGTTTTAAT CGTCTTTTCT GTTTCATCGA	4800
TGACACGACC AAGCTTTTGT ACAGTAATGA TCAGATAGAC CAAAAGACA ATCAAAGCTA	4860
GGGCAACAAG AATATATGCA ACTTCTAACA TTTAGTTTTC CTCCTCTGTA ATATAGTAAG	4920
GGGCCTTCTT TCGATTTTGA TAAATAACGA TCATTATACC GAGACCGATA AGGACAACTG	4980
ACAGCCATTG GGACACTCGA AAGCCGAAGA ACATGAGACT ATCTGTTCGC ATACCTTCGA	5040
TAACCATACG ACCGAAACCA TACCAAATCA AGTAAAAGGC CGTGATATGA CCTCGTCTGA	5100
GACTCTTCCA TTTCCGTCTA AAAATCAGAA TCAAGGCAAA GCCAAGCAGA TTCCATAGAG	5160
ACTCATAAAG GAAAGTCGGT TGACGGTAGC TCCCCTCAAT ATACATCTGG TCACGGATAA	5220
AGCCAGGTAG ATAATCCAGA TTATCCACTG TTGCACCATA AGCTTCTTGG TTAAAGAAAT	5280

900

TACCCCAACG CCCCAAACCTT TGAGCAATCA TAACGCTAGG CGCCGCAATA TCTAGAAAAAT	5340
CCCAAGTATT GATGAGTTTA CGGTCAAGCA AGATATAGAG CACAAGAGCC CCAGTTATCA	5400
AACCACCGTA AATGGCCAAA CCACCATTCC AAATGGCAAA AATCTCTCCT AAATTCTGAC	5460
TATAGTAATC AAATCGGAAA ATAACATAGT AGAGACGAGC TCCTAAAATA GCCAAGGGAA	5520
AGGCTACTAA GATAAAATCT AAAATATCGT CTGGTATGAT CTTCTTTCTA GGTGCTTCTT	5580
TCATGGTCAA ATAAACCGCA AGAATCAAGC CTGTCACAAT ACATAAGGCA TACCAACGAA	5640
TGGCTAGGGG TCCTAGTTGA ATAGCAATTG GATCAAGCAT TTTGCACCTC ATTTGAGCG	5700
ATTAGACTTG TCAGTCGTTT GTCGAACAAA CGGGTCGCAT CAAAGCCCAT TTCCTTGGCA	5760
CGATAATTCA TGGCAGCTGC CTCAATCACA ACAGAGATAT TACGACCTGT TTAACTGGA	5820
ATACGAATAC GAGGAATGtA CGCCAGAAAC TTCAAGTTCC TCTGCATTAT TTCCAAGACG	5880
ATCAAAGGTC TTATGCGTAT CGTAATTTTC CAAATAGACA GCAAGCTGAA CCTGTGAAGA	5940
ATCCTTGACA GCACTCGCAC CGTAGAGACT CATAACATCG ATAATACCAA CCCACGAAT	6000
TTCAATCAAG TGTTCAAAA TTTCAGCTGG TTCACCCAG AGAGTAATCT CATCCTTGGC	6060
AAAGATATCG ACACGGTCAT CGGCTACCAA ACGGTGACCA CGTTTGACAA GCTCAAGACC	6120
TGTCTCGCTC TTACCAATTC CACTATCTCC CTGAATCAAG ACGCCCATCC CATAAATATC	6180
CATCAA	6186

(2) INFORMATION FOR SEQ ID NO: 132:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 9541 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 132:

GAAAATCACA ACCCTTTTGG CAAAATTTTT GAGATTATTT TCACAAACTT GATTTTTC	60
AGTATACTCA ATAAAAATTA AAAAAATCCA CTACGTCAAG GCGAGGCTAA TGTGGTTTGA	120
AGAAATTTTC GAAGAGCGTG AATGAGTATC ATCTATAGTA AAATAAAAAA ACTGAACAAT	180
TTGGTTGGGG ACAGCCAAAC CAATTTCTCA CAATGTTTCA GAAACAAGGG TGTGCTATTC	240
CAATTTCAGC CTACTATAAC TGTCTAGAT TGCTGAAACA AAGTCTAGGT AAAAGTCTTC	300
ATAATAAAAA GACCTCCTAT CAAGTGTTC AAAAACTTGA TAGGAGGTCT TGTTTTGTGA	360
AAATATTTAT CAAATTTTCT ATACAAGTGA GCTGTTAGCC AGGTTCTTTC TATTCTTTCA	420
ATTTCATGA ATGGATTTTT TACTAATACT CATAACTGGG AATTTGTCTG TGTAATAATA	480

901

CGGAGATAGA TGGTATTTAT AAAACACTCA AGACAGCTAG ACTAATATCA TTTAAAACAT	540
TATCTTCTTT TGAGCGACTG TTGGTTACCA ACATAGCTAA ATTTCTTGCA TTTTCAAATT	600
GATAGGGTTC TGATTTAGCA TTCACAACCA CCAAGAGGTG TTCTTTGCCG TGAAC TTCAT	660
AGATAAGGTA GCCGCTATGT TCAATCGCAG AATGCACAAA GACATGATGG TAAATTTTCAT	720
CATAGCTAGA GTAAGAAAAG GCACCAAGTTT TTGTCTTCAA TCGGATGACT TGACGGATAA	780
ACTCAATACT GTCTTGACGC TCATTAATCA AGTTCAGTT CACTTGGTTC AACTGTGACG	840
GAGCATTATA GCTATTCATC GCACGCTCTC TATCATCATG GGTCAACTCA CCATTTTCAC	900
CAGTCGCAAC CAGTTTGGTA CGACCAAATT CTTGACCGAT TTCCATAAAG GCCATCCCT	960
GCATGAGCAG ATTCATGGCT GTGGCAGTTT CGACCTTGC CATGATTTC TCTGAACTTT	1020
GGTCTGGATG AAGGGTTGCC AATAAATCGT GAAGATTGTA ATGTGCATGG GCTTCTACAT	1080
AGTTAAGCAC CTGATTGGA TGTGTATAGC TTCCTAATTC ACGACTTCCT AGGATTGCTT	1140
TAGCTAGAAT TGGCTCTGTC GCAGCACCAC TGACAAAACC TGACTTGATA GCACCATAAA	1200
CTTCTCCCC TTTGACAGCA TCGCGCTGAT TGTCATTAAA GAAACCAATA TTTGGCATCT	1260
GGTAGGCATT GTCCTTCTTG GCCTTATCAT AAGGGGCAAG ACCTGTTCCT ATATCCCATC	1320
CTTCTCCATA GAGGATAATG TTGGAGTCGA TTTTCATCAA GCTTTGACGA ATCATCTGCA	1380
TGGTCTTGAC ATCATGAATC CCCATCAAGT CAAAACGGAA GCCGTCAATA TTATATTCTT	1440
GCACCCAGTA TAGAAGAGAA TCAATCATAT ACTTGCAGAA CATTTCTGTG TCACTGGCTG	1500
TTTCATTTCC AACACCCGTT CCATTCTGGA AGGTACCATC TGGATTTCATA CGATAATAGT	1560
AATCAGGGAC TGTTGTTTGG AATGGTGCAT CAACAACCTGA GAAGGTATGG TTATAGACTA	1620
CATCCATAAT GACTCCAATA CCCGCATCGT GATAAGCTTG AACCATCACC TTCAAATCAC	1680
GAATGACCTG AGCTGGATCA TCTGGATTAG TTGAAAACT AGTTTCTGGC GCGTTATAGT	1740
TTTGTGGATC ATAACCCAG TTGTAGGTTA CATTTCCATC CTCATCGTAT TCTTTATGAC	1800
GGTCTGCAAT TGGTTGCAAT TGAACATAAT TGTAGCCAG CTTCTTGATG TAATCAAAAG	1860
CAGTTGACTG GCCGTATTGG TTAAGTGTTC CAGCCTGAGC AGCACCCAAG AAAGTTCCTC	1920
GAAGATGTTT ATCTACACCC GATGTAGGTG ATTTAGTCAA ATCACGAATG TGCATTTTAC	1980
AGATAACTGC CTTACATGGA TTTTCCAAGC GCCAAGTAGC CTCCGAACCG TGCTTAACCT	2040
CGAAGTTTTC AACTTGCTTT TCTACATGGC TCAGAATAGC TGAACGTTTG CCATCAGGGC	2100
TGGTCGCGAT TGTATAAGGA TCACGTGTCA GTGTTTGGTG ATGAGGGAAT TGGACTTGAT	2160
ACTGATAAGT CTTACCTACC AAATCTTCTT CAACATCCAA ACTCCAGACA CCGATTGTAT	2220

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TGTCCTTATG ATTATAAGAG TAGCTATTGC CTCTTTTCAT CTCAAAAGTC TTCCAAACGG	2280
GTGCATCATT AGCAGCTGAT TCATAAACGA CAACTTGACAC TTCTGTCGCT GTAGGTGACC	2340
AGAGAGAAAA ATGAGCCTGA TTGTCTCTA CACGGCAACC CAATTCTCCT TGGTAACCCC	2400
AATGATGATC AAAACTAGCA CTGTTAATGG CCTTATCAAA GGCAAAAGGA TTTTGATTTT	2460
TATAGAAAGG ACTGGCAATA GCAGGATTTT CAGAGTAATA AATCCTATCA TCGCCTTCCA	2520
AAATCCAGAC CTCTGTTAAT AGGGGATAGT GATTAAAACG GATAGAATAT TCTTTACTAG	2580
TTTGACCTGT ATGAACCACA AAATCAAGC TTTCTATAAC ATGTGAACCT GGGTGTTCAC	2640
AGCTAAATAA AGCTCCAAAA TAATCTTCTT TGTAGGTTAG CAAATCAATT CGTTGATCCT	2700
GACTTTTAC AAAGGAGCAA GTGTCATATT CTCCATTCTT ACGATGGTAA TGAATGCGCA	2760
TAGGGTAGTT ATACATTTTT TATTTTCTCT TTTTACTTTG TTTCTATTTC ACTAATAAAT	2820
TTTTTGTCAT CTCGTCTCAA TTAACAGACA TAGTCATATT CTCTAAACTC TGTTTTTAAA	2880
CGATCCATTA CAAACTTTCT AGCCATGCCT CATCTCTGAC CTGGATACCA AGTTCTTGTG	2940
CTTTTTCAG TTTACTTCCA GCGTCTGCAC CTACCACGAC GAGGTCGGTC TTTTGTAGAA	3000
TACTACCTGT CACTTTGGCA CCCAGACTTT CGAGTTTACT TTTAGCTTCT GAGCGCTTGA	3060
GTCGTTCCAA TTTTCTGTG AATACCACGG TCAAACCTGA CAAGGCCGCA TCCGCTACTA	3120
CCGTCTGTCC TTTATAGTCC AGATTGACCC CAGTTTCTTT CAATTCTCTG AGCAGAATTT	3180
CAGAGCCTTC TGTCGCAAAA TAAGTCTGAA GACTTTTGGC AATCACGCCA CCTAGACTTT	3240
CAATACTAGC CACTTCCTCT GAATCTGCCT GAGACAGATT TTCAATTGAA TGGAAATATT	3300
GAAGTAAAAG CTGACTAACC TTGCTTCCGA CATGACGAAT TCCCAAACCA AATAAGAGCT	3360
TCTCGGCAGA ATTTTCCTTT GATGCTTGGG TAGCCTGATA CAGTTTAGCA GCGGACTTTT	3420
CCTTAACTCC CTCTAAAAGG AGGAAATCCT CTTCTTGCAA ACGATAAATA TCCGCCACAT	3480
CCTTGACTAA ATTAGCAGCA AAAAGCTTCT CAACAATAGA TGGACCAAGG CCTGTAATAT	3540
TCATAGCATC ACGAGAAGCA AAGTGAATCA AGCCTTCCAT GATTTGAGCA GGGCAACGCG	3600
GATTGATACA ACGTAGGGCC ACTTCATCTT CAAAGTGCAA CAAGTCAGAG TTACAACCTG	3660
GACAGTTTGT AGGGATATCT AGTTTTCCTT CAGAAACCG TTTGGACTCT ACCACACGTA	3720
AAACGGCAGG GATGATGTCA CCAGCCTTAT ATACAATGAC CGTATCGTCT TTTCGGATAT	3780
CTTTTTCAGC AATATAATCT ACATTGTGCA GGGTCGCACG GCTAACAGTC GTACCGGCAA	3840
GTGTACTGG TGTTAGATTA GCAGTTGGAG TTACAACACC GGTACGGCCA ACTGTCCAGT	3900
CAACTGATAA GAGTTGAGCT TCTTTTCTT CGGCAGGGAA CTGTAGGCT ACTGCCCACT	3960
TTGGAGCCTT AACTGTAAAA CCAAGTTCTT CTTGACTTGC TAGGTCGTTG ACCTTGATTA	4020

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CCACTCCATC AATATCGTAA GGCAGATTTT CCCGTCCTG TCCTACTTCT TGGATAAAAT	4080
TCCAGATTTC ATCTATGTTT TCAGCCAAGA TTCGCTTAGG ATTGACCACA AAACCTAGTT	4140
GTTCTAGGTA CTTCAAACCC TTTTCTTGGC TATCACGAGT TGAAGGGCTG GCTTCTTGAT	4200
AGAGAAACGT TGCAAGATTA CGCTTGCAA CTA CTGCTGT ATCCAAGTGA CGCAGAGTTC	4260
CTGCTGCCGC ATTACGAGGA TTAGCAAATT CAGGCTCTCC ATTTTCTTGG CGCGCTTGGT	4320
TAAGTTGGTC AAAGGAAGCG CGTGGCATGT AACATTCCCC ACGAACTGTG ATATCTAGTT	4380
CTTCTGGCAA AGTCAAAGGG ATGTCCTTAA CACGCTTGAG GTTTTCTGTG ATATTTTCAC	4440
CAATTGAACC ATCTCCACGT GTTACCCAG CAACCAAAAT CCCCTTTTCA TAAGTCAGCG	4500
AGATAGATAA GCCATCGATT TTCAGCTCAC AAATATAGGT CGGATGAGCC ACTTCCTTAC	4560
GAACACGCGC ATCAAAAGCA TCTAGCTCCT CACATGAAAA AGCATCCTGC AAAGTATAAA	4620
GAGGATACTG ATGACTGTAT TTTTCAAAAC CATCTAAAAC CTTGCCACCA ACACGATGAG	4680
TCGGACTGTC TGCTAGCACT TGCTCTGGAT AAGCAGTTTC TAACTCGACC AACTCAGGT	4740
AAAGGCGGTC ATACTCACTG TCTGAAACCG AGGGATTATC GCTGGTATAG TACTCAGTCG	4800
CATAGCGATT GAGCAAAGCG ACTAACTCAT TCATTCTTTT ATTCATAAGA CCATTTTACC	4860
ATAAAACAAG CCCTCCTCAC AAACGAGAAG GGCGGAAAAA ACACTTAGTT TGAAATTATT	4920
TTTGAAATC AAGCAACCTT ATATCAATTT TTCAAAATGA GTTCGAACAT ATCCGAGAGC	4980
TAAGAAATAT AAGGCTACAA CTCCAAGTCC AATAATCAAG AAAGAATAAA GATGGACACT	5040
TGGCAAGACT GTCATAAATC CTTTTGCAAT AGGCATAAAT AGAATAGCTA AGGTAAAAAT	5100
TGTACTCAGT ACTCTTCCAA GAAATTCGCT CTCAACCTTG GTTTGTACTT GAGTAAAAAA	5160
GTGAATATTA AAAATCGTCA TAAACAATTC ACAAATAAA TTTCCAGAAA AGGAAAGAAA	5220
AGTTGGAAGT GGTAATCCCA TCATAAAAAAC TCCGACACCT GTCAAAGCCA GTAAAAATCAA	5280
AAGATTATAA ATATTAGCTT TAATTTTACT AGCTAGAAGA GCCCCAATGA TGGAACCAAT	5340
AGCCCCATA GTTAAAATAC TTGCATAGGC TCCTTCTGAC CCGTAAAGCT GATTGAAAAA	5400
GGGAAGTAGA AATTCAAAAG CTGCAAAAAA GAAATTAACG CTGGAAGCTA CCAGCAAAAG	5460
GAAGAAAATT TCTTGCTGAT GCCAGATATA GTGTAACCCA TCCTTGATAT CTACAAAAAT	5520
ATCTCTCCCA GTAAAAGCCT TTTTCTCTTG AACTTTTGCT TCCTCTTTTG GAAGGAAAGC	5580
CACTAGAACA AAAGCAATGA AAAAAGTCAG CGAGTCTAGC AGTAGCGTCA TATGGAGACT	5640
TGCAAACTGT AAAACAAGGA AGGAAAGAAC AGGAGAGCTA ACACCTACAA CCTGCAAAAC	5700
CAGCTCTAAG CGAGAATTAT AGATCACAAT CTCATCTTTC TCCACCACTT CAGTTATGAT	5760

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AGCTTTATTG GCTGTGCGAG AAAAGGCCAA AGCAATAGCC TGCACAATGT TAGCAACAAT	5820
CAAAGCGCCA ATCATCCAGC TATCATTCCT TATGAAAGAA ATAGCCAGAC AAAGAATCCC	5880
ACAAACAAGA TCTGCCGTCA TTAATACTTT ACGACGAGAA AAACGGTCTG AAATAACTCC	5940
GCCAAAGGGA TTGACGAGAA TAGATGTGAC GAGCTCAGAA ATCTGATACA TTCCTAAAC	6000
TGTCTGTCTT ATAGTCCCCA TAGAAGCCAA CCAGACACTA TTTCCATAAT CATAGAGCAT	6060
ATTTCCCAT TTTATTGATAG CCCCACGGCT AATCAACTGC ACTGCATAGC GATTCATATT	6120
AAAGCTCCTC TCAAATTTTG AAACCTATTGT ATCAAAACCG AAAGGAGCTT TTTATTTT	6180
CCCTTATTTG GGAAATTA CTTTGTGACAA ATTTTTCGTA GTGTTCCTGA TAATAGGCTA	6240
CTTGCTCTGG AAGACCTAAC ACATCAAAAA TATGCATGGC CTCTGCATC TGCTTACAGC	6300
CTTCTTTACA CTGTCTTTT TGATATAAGG CAAAACCTTT TAAATAATGG AAAACATTAC	6360
GCTCATAAAG CTTAATACCT TTGTCAATA TCTTCTCTGT ATAAGCCTCA AAATAGTTGG	6420
CATTATAAAA AGAAGAATGC TCTAAACAAT GCTGGTAACA ATTGAGGGCC AAAATCAACA	6480
CTAATCTCTT ATGGCGACTA ATCTCTTGGT AAAATTCCTC CCTCTCCATA ACTTCTCTAC	6540
CAATCCGAGT GACATAGTCT ACATCGTAGA AACTATAGAG GTTACCGAAA AGAATCAACT	6600
CATACATGGT CCATTCTTCT GTTTTGAAGA GATAATCTGC TACCTTACCC AAATCATCCT	6660
GCTTCATATC ATAACCTCGA TCTCTTTGAC AAATCAGACC TTGTAGCAAA ATCCAGTTCA	6720
GCTCAAAATA AAGGGGAGTC GTCGAACTCT TAGACTTTTC AAGTTGTCT CTTGAAGCT	6780
TTTGAAAACC TGCAATATCG TTTGAATAGT AAAGTGGGAT AATCTGTGCC ATCATAGACA	6840
CATGTTTCATG ATTATGAAAA TTCCTTGCCT TATCCATGAA ATTTTCGATT GTTACATGAA	6900
TGTTATCCAA AATCTCAAAG AAACGGGAGA CTGCCAGGTC AGACTCCCCA AGCTCAAAGC	6960
GAGATAACTG AGAGGTAGAG CAGGATTCGC CTGCTGCTTC CTTTAAAGAA TAATTTCCAC	7020
TTGTTTCGAAA TTCACGAAAT ACTTTTCCAA GATGTTCCAT CTTTACACCT GCTCTGATAA	7080
TTCTTCCAC TCAAGCATAG CTTCTTCTG ACGATGGCTG ATTTTGTCCA GCTCAGCCTG	7140
TAATTTCCATG AGTTTGTGCG CATCGTTTGT TTCCAACATT TGTTTCAGAAA TGGCTTGGCT	7200
TTGACTTTCT AGCTCTTCAA TTTTCACTTC TAGACTTTTCG ATTTGTGCGA TGAGTTTGGC	7260
AACTTCTTTT TGACTTTCTT TCTGGGCTG ATAGTCATG ACTGGACTTG CTTCTTTTGC	7320
TTGATTGCTA GTTGAAGCTT CCTCAGTCTG ACTCATTCTT GCTGTTGCTT TCTTCTCAAC	7380
ATAGTAGTCG TAATCTCCAA GGTAGAGAGT TGAACCATTC TCAGACAATT CCAAACATG	7440
AGTTGCCACA CGATTGATAA AGTAACGATC ATGACTGACA AACAGCAAGG TTCCATCAAA	7500
GTCAATCAAG GCATTTTCTA GCACTTCCTT ACTATCAATA TCCAAGTGGT TGGTCGGCTC	7560

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ATCCAGAATC AAAAAGTTAT TGTTTTCCAT AGACAATTTA GCTAAAAGCA AACGAGCTTT	7620
TTCGCCACCA GATAGCATGC CGACTGATTT TTAAACATCA TCTCCTGAGA AAAGGAAGGC	7680
TCCAAGACGG TTGCGGATTT CAACTTCTGG TGTCAGTTTG AAATCATTCC AGAGTTCATC	7740
CAGCACCGTA TTA CT TGGTG TCAGCTTGCT TTGGGTTTGG TCATAGTAAC CAACCTCAAC	7800
ATTAGCGCCA AAGCGCTTTT TCCTCTGAT AAAAGGAATC TGGTCCACAA TAGACTTGAT	7860
AAAGGTTGAC TTGCCGATAC CATTTGGACC AACGATAGCG ACAGCATTCA TCTTACGAAG	7920
ATCTAGGTTA ATCGGTTGTG ACAAGACTTC CCCGTCATAG CCAACAGCTG CATTTTCAAC	7980
AGTCAAAACA ACATTGCCCCG ACGTTTTTTC AGACTGGAAG GTCATGTTGG CTGATTTCTT	8040
GCCAGCTTCA GGCTTGTTCA AACGTTCCAT TTTTCCAGT TGTTTACGGC GAGATTGAGC	8100
ACGTTTAGTC GTTGAAGCAC GAACTAGATT GCGATTGACA AAGTCTTCCA GAGCAGCGAT	8160
TTCTTCTGT TGCTTTTCAT AGTTTTTTCG CTCAGTAACT AGCTTTTGCT CCTTCAATTC	8220
GACAAAACGA GAGTAATTCC CCACATAGCG ATCCAAGGAA TGCTTGGTCA AATCTAGCGT	8280
AATGTGCGCA ACCTTGTTCA AGAAATAACG GTCGTGGCTG ACGATAATGA GGGCACCGCT	8340
ATAGTTTACC AAGTAATTCT CTAGCCAGGC GATGGTTTCA ATATCCAAGT GGT TAGTTGG	8400
CTCGTCCAAG ACCAAGAGAT TGGGCTTTTC AAGGAGCATT TTGGCAAGTG CCAAACGAGT	8460
ATTTTGACCA CCAGAAAGCT CAGCAATTTT CATCTGCCAC ATAGACTCGT CAACTTGAA	8520
TCCATTCAAA ATCGCTCGAA TATCAGCTTC ATAGGTAAAG CCACCTGCTT GCGGAAAATT	8580
CTCAGATAAG CGGTATAAT CTGACATCAG TTTATCCAAA TCCTCACCAG ACTTTTCACC	8640
CATCTCCAGC TCCATCTGAC GCAGTTGTCT CTCCGTCCGA CGCAAATCAT TAAAGACATG	8700
AAGCATTTCA TCGTAGATGG TATTTTCAGA CTCAAAACGG CTATCTTGGG CTAGGTAAGA	8760
CAGAGAAATA TCTTTTTTCT TATTGATTTC TCCGCTAGTT GGCTCCTCTT CTCCAACATA	8820
AATCTTCAAA AGAGTAGACT TACCTGCACC ATTTTCCCA ACAAGAGCAA TCCGATCTCG	8880
TTCATCAACC TGCAGGTTGA TATTATCGAA AAGAACCTCT CCTGCAAAAG AACGTTCAAT	8940
TTTATTAGCT TGTAAAATAA TCATACAAGT AGTATAGCAT GTTTCCTTAA GGCATTCAAG	9000
ATAATCGTAA GTCTTTTAGT ACAACTTTTA TAACATAAAA TAACTAAAT TATGTATATT	9060
TTATATTAGA TTA CT TCACT ATCTTGTTGG ATTTTCTAAC CAGCTAATCT TGTTTCAAAT	9120
AGTTATCGCA CAAGTCTATT ATTTAATTCT TTTCATCATT TACGTACGTA TAGCAGATTG	9180
AAATAAGATG AGAACAAATC GATTGGGAAA GTAAAATTAA TTTCTATAAA TGTTT TAGCA	9240
ATTGTTTCGT ACTATTTTAG ATTCAGTCTA CTATATACAA TATTTTCGGA ACATTCAACT	9300

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TTTTAACTCT ATTTATTACT AGATTTTCATA ATTAAAAAAC CTACTGACCA AGCTAGAAAAG	9360
CTTGATACAA TAGGCTTTTT AAAGACTGAT TATTTAACAG CGTCTTTAAG AGCTTTACCA	9420
GCTTTGAATG CTGGTACTTT AGAAGCTGCA ATTGTCATTT CTTTACCAGT TTGTGGGTTG	9480
CGACCTTTAC GTTCTGCGCG CTCACGAACT TCAAAGTTAC CAAAACCGAT CAATTGAACT	9540
T	9541

(2) INFORMATION FOR SEQ ID NO: 133:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 3502 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 133:

TTGACTATCC TATCATGCTT TCTAAGGTCT ACTCAAGAAA ATCATTTTCA AGTTTTCACA	60
CCTTTCTCAA AAAAGTTAAA AAATTTTCTC AAAAACGCTT GACTCTGACC TAAGGCGAAG	120
GGTTATACTA TCATTGTAAG GAGGAAATCA TGTACCATAT AAAAGAAGCT GCGCAGCTTT	180
CAGGTGTCTC TGTCAAGACC CTGCATCACT ATGACAAGAT AGGACTCTTG GTCCCCTTAA	240
AGTCGAAAA CGGCTATCGA ACCTACAGTC AAGAGGATTT GGAACGCCTT CAGGTCATTC	300
TTTACTACAA ATATCTAGGC TTTTCTTTAG AGAAAATAGC AGAGCTGTTA AAGGAAGAAA	360
GGACAGATTT ATTGCCCCAT TTGACTAGGC AGTTGGACTA TCTAACTCGC GAAAGGCAAC	420
ATCTGGATAC CTTGATTTCC ACCTTGCAAA AACTATTCA AGAACAAAA GGAGAAAGAA	480
AAATGACCAT TGAGGAAAAA TTCACGGGAT TTAGCTATCA AGACAATCAA AAATACCACC	540
AAGAAGCGGT AGAGAAATAT GGTCAGAAG TCATGGGACA AGCGCTCGAA CGCCAAAAAG	600
GTCACGAAGA CGAGGCTACG GCCGCCTTTA ACCAAGTCTT TCAAACCTTG GCACAAAATC	660
TTCAAGTTGG TTTACCTGCA ACAGCAACCG AAAACCAGGA GCAAGCAGCC AAGCTCTTGC	720
AAGCCATTCT CACTTATGGA TTGACTGCT CTATTGAGGT ATTTCGGTCAT ATCGGTAAAG	780
GTTACGTCTA CAACCCAGAG TTTAAGGAAA ACATTGACAA GTTTGGTTCT GAAACAGCCC	840
AGTACACGTC AGATGCCATT GCGGTTTACG TTCAGACAAA TGCAGAATAA ATAGGCTAGG	900
AATTTCTAG CCTATTTTTT ACTTCAAATC ATAAAGCCAG TCGTCACCGT TTTGTAGTA	960
AAAGAATTCA CTGAGATCTT CTTCTAGAAA CACACGAAGC ATATCAGACA TATCATCGGT	1020
TGCAAGTTTT AGATGAGAAA GATTTTCAAA GTCCTCCAC CAACTTTCC CTTGCTCTGA	1080
AGACTGGAGT TCACCAGTAA AGTGTCTGT CTTGTAAAAA AGGACGACAT AACGATAATC	1140

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CTTGTCGTCA TACCAGTTT TGATACCACA GAGTTGGGGT TTGGAAATGA TCAGACCAGT	1200
TTCTTCTTTC ACTTCACGAA TGACAGCATC GACAAAGGAT TCGCCACGTT CAACATGACC	1260
ACCAGGAAAA GTAATGCCAG ACCAGTCGGG ATTAACTCGG TCTTGGACCA GGACCTTATC	1320
TCCGTTTTTA ATCATAACACA TGTTAACAAA TTCGACTGCC TCTCTTCTGT TCATTCTTCA	1380
CAACCTTTAA TCTTTAATCA TAATGCAGAC TTCCCGCCAC CCAGCCGGTA CAGAGGGCAG	1440
AAGTGATGTT AAAGCCACCC GTGTGGGCAT TGATATCCAT AACTTCGCCT GCAAAGTGGA	1500
GGCCAGGTAC CAGCTTACTT TCAAGGGTTT TAGGATTGAT TTCCTTGAGA CTGACTCCAC	1560
CCTTGGTAAC AAAGGACTTT GCAAGGGACA TTTTTCAGT TACAGGAATT TTAAGTTCTT	1620
TAATGGACTG GACAAGTTGT TCTCGTTCCT TTTCAGTCAG TTGTTTGA CT TTTTCAGGAT	1680
ATCCTTGTAC AAAAAATTCG GCCAAGCGTT CTGGTAACAA GGTTTTTTAAA GCGTTTTTCA	1740
AGGATTTTTT CCGATTTTCT TCTAGAAATG TAACCAAGTC CTTCTCAGAA AGTTGAGGCA	1800
AAACATCGAG TGAGAGAACC TCCCCACCTT TGACAAAGCT AGACATGCGT AGGGCAGCAG	1860
GACCTGACAA ACCAAAGTGG GTAAAGAGTA AATCATGAGT GATGACATGC TTACCATAAC	1920
TTAGGGTCAC ATCGTCCAGA GAAATACCTT GTAAGGCTTT ATGTGGAAAA TCTGTTAATA	1980
AAGGACTTTC AGCAGCCTCA AGATCGGTGA TGGTATGCTT AAAATGGCGA GCAATCTCGT	2040
GACCAAAACC AGTCGAACCA GTCGAAGGAT AAGACTTACC ACCTGTGTG ACAATGAGTT	2100
TCTCACAAGT GAAGGTTTGA TCCGCTGACT TAAGGACAAA CTGGTCATCT ACTTTTTTAA	2160
CAGAAACGAT TTCTATTGA GTAGCAACTT GACCACCTAG TTCGGTGATT TTCTTTTCCA	2220
AAGCTTCGAT AATAGTCCGA GACTTGTCAC TGGCTGGAAA GACGCGTCCG TGGTCTTCGA	2280
CCTTAAGTTT AACACCATT TCTGTAAAAA AGTTGATGAT GTCATGATTA TCGAACTGGG	2340
AGAAAACACT GTAAAGAAAG CGTCCGTTT CAGGAATTCC AGCTAGCAGG TTGTCTAAGC	2400
TACCATTGTT GGTCAATTG CAACGTCCCC CACCAGTCCC AGCTAATTTT TTTCCAAGTT	2460
TCCGATTTTT TTCGATGAGG AGGGTTTTTCT GTCCATAAAA GCTACTGGAA ATCGTAGCCA	2520
TCATACCAGC AGGTCCCCCA CCGATGACAA TAGTATCAAA ATGTTTCATA GCTCTATTGT	2580
ACCACAAAAA AACAAGAGAT GATGGTCACC TCTTGTCAG AATGCAATTA ATCAATTTC	2640
TAGCCCATCA GCAAACCGCC CTCTTCTGCA TAGAACTGC AGAGACCAGA GGTGGTAGA	2700
ATTTTAATAT CCGCTTGTTG GAAGGTTTCA CGGATTCGCT CTGAGAGCTG TTGACAACAT	2760
TTTTCGTTAT TGCCTTGGGC CATGACAATA CGGCCACCAG CATATCCAGC TTTTACTAAC	2820
TCATCATAGG CAGCTTGAAC TGATTTCTTT GATCCCCTTG CTTTTTGTAG CAATTCGAGA	2880

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GTCCAGTTT CACTAGCTTT TCCGACCATA CGAATGTTGA GAAGGCCAAC GACCGTACCG	2940
ATAAGCTTGC TCAAACGGCC GTTCTTCACC AAGTTATCGA CTTTGGCTAG GACAAAGAGC	3000
AACCTAGTTT TTTCTTGATA GGCGGTGATA GCTTCAACCA CTTCTTCAAA AGACAAGCCC	3060
TGGTCAATCA AGTCATTCAA TTTTCTACG AGTAGGTCAA CTTCAACCACC AGCAGATAAA	3120
CTATCAATCA CATGAATCTT AGTGTCAGGA TGGTCTTCCA GATAAATATT CTTTGCTAGT	3180
TGAGCACTAT TGTGACTGCC AGAAAGGGTA CCTGTGATGG TTAGTAGGAA AATGTTTTTG	3240
GCACCTTCAA ATGCTCGCAA ATAGTCATCT GGGCTTGAC AAGCCGATTT TGAAGCTTCT	3300
GCAGTTGCAT ACATGGTTTC CATCATTTGG TCAATATCGA GACTGGCGTC ATCAACAAAG	3360
ACCTGATCAG CTACTTGAAT GGTAAAGGG ACACCTACAA AGGTTGTGTT AATAGCTGGT	3420
GTTGGCAGTT GACGATAATC ACAACCAGAG TCAGCAATAA TCTTCCAAGT CATAGAAATT	3480
CTCCATCTTT GTCAGGAACG AT	3502

(2) INFORMATION FOR SEQ ID NO: 134:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 12665 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 134:

CGATTGATTT TTTTAAAGCG TTCGATAGAG AATGAGAAAC GAATCCTTAG CAATGGCGGG	60
AAAGAATTTG GAGTTGAGAA TACAAAACGA TTAACATGAG CTCATATTGT TTTTATCTC	120
TCTTGCTTGG TTGAGGCAAT GGTGCACAAG ACAATTTTGG ATGGCATGGG CATGGTTGGT	180
TTAGTCTTGC TTATTTTTC TATGCTGATG TTGATGTTGG TGATTCACTT GTTGGGAGAT	240
ATTTGGACAG TGAAGCTTAT GCTGTCAAT AATCACAAT ATGTAGATCA TATCTTGTTC	300
AGGACAGTAA AACACCCTAA TTAATTTTTC AATATCTTC CTGAGTTGAT TGGCTTGACC	360
TTGTTGAGTC ATGCTTATGT GACTTTTGTT TTAGTTTTC CAGTTATGC AGTTATTTTG	420
TATCGACGAA TAGCTGAAGA GGAAAAGCTA TTACATGAAG TTATAATCCC AAATGGAAGC	480
ATAAAGAGAT AAATACAAA TTCGATTAT ATACAGTTCA TATTGAAGTG ATATAGTAAG	540
GTTAAAGAAA AAATATAGAA GGAAATAAAC ATGTTTGCAT CAAAAAGCGA AAGAAAAGTA	600
CATTATTCAA TTCGTAAAT TAGTGTTGGA GTAGCTAGTG TAGTTGTTGC CAGTCTTGTT	660
ATGGGAAGTG TGGTTCATGC GACAGAGAAC GAGGGAGCTA CCCAAGTACC CACTTCTTCT	720
AATAGGGCAA ATGAAAGTCA GGCAGAACA GGAGAACAAC CTAATAAACT CGATTCAGAA	780

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CGAGATAAGG CAAGGAAAGA GGTGAGGAA TATGTAAAAA AAATAGTGGG TGAGAGCTAT	840
GCAAAATCAA CTAAAAAGCG ACATACAATT ACTGTAGCTC TAGTTAACGA GTTGAACAAC	900
ATTAAGAACG AGTATTTGAA TAAAAAGTT GAATCAACCT CAGAAAGCCA ACTACAGATA	960
CTGATGATGG AGAGTCGATC AAAAGTAGAT GAAGCTGTGT CTAAGTTTGA AAAGGACTCA	1020
TCTTCTTCGT CAAGTTCAGA CTCTTCCACT AAACCGGAAG CTTGAGATAC AGCGAAGCCA	1080
AACAAGCCGA CAGAACCAGG AGAAAAGGTA GCAGAAGCTA AGAAGAAGGT TGAAGAAGCT	1140
GAGAAAAAAG CCAAGGATCA AAAAGAAGAA GATCGTCGTA ACTACCCAAC CATTACTTAC	1200
AAAACGCTTG AACTTGAAAT TGCTGAGTCC GATGTGGAAG TTAATAAAGC GGAGCTTGAA	1260
CTAGTAAAAG TGAAAGCTAA CGAACCTCGA GACGAGCAAA AAATTAAGCA AGCAGAAGCG	1320
GAAGTTGAGA GTAAACAAGC TGAGGCTACA AGGTTAAAAA AAATCAAGAC AGATCGTGAA	1380
GAAGCAGAAG AAGAAGCTAA ACGAAGAGCA GATGCTAAAG AGCAAGGTAA ACCAAAGGGG	1440
CGGGCAAAAC GAGGAGTTCC TGGAGAGCTA GCAACACCTG ATAAAAAAGA AAATGATGCG	1500
AAGTCTTCAG ATTCTAGCGT AGGTGAAGAA ACTCTTCAA GCCCATCCCT GAAACCAGAA	1560
AAAAAGGTAG CAGAAGCTGA GAAGAAGGTT GAAGAAGCTA AGAAAAAGC CGAGGATCAA	1620
AAAGAAGAAG ATCGCCGTAA CTACCCAACC AATACTTACA AAACGCTTGA ACTTGAAATT	1680
GCTGAGTCCG ATGTGGAAGT TAAAAAGCG GAGCTTGAAC TAGTAAAAGA GGAAGCTAAG	1740
GAACCTCGAA ACGAGGAAAA AGTTAAGCAA GCAAAAGCGG AAGTTGAGAG TAAAAAGCT	1800
GAGGCTACAA GGTTAGAAAA AATCAAGACA GATCGTAAAA AAGCAGAAGA AGAAGCTAAA	1860
CGAAAAGCAG CAGAAGAAGA TAAAGTTAAA GAAAAACCAG CTGAACAACC ACAACCAGCG	1920
CCGGCTCCAA AAGCAGAAAA ACCAGCTCCA GCTCCAAAAC CAGAGAATCC AGCTGAACAA	1980
CCAAAAGCAG AAAAACCAGC TGATCAACAA GCTGAAGAAG ACTATGCTCG TAGATCAGAA	2040
GAAGAATATA ATCGCTTGAC TCAACAGCAA CCGCCAAAAA CTGAAAAACC AGCACAACCA	2100
TCTACTCCAA AAACAGGCTG GAAACAAGAA AACGGTATGT GGTACTTCTA CAATACTGAT	2160
GGTTCAATGG CGACAGGATG GCTCCAAAAC AATGGCTCAT GGTACTACCT CAACAGCAAT	2220
GGCGCTATGG CGACAGGATG GCTCCAAAAC AATGGTTCAT GGTACTATCT AAACGCTAAT	2280
GGTTCAATGG CAACAGGATG GCTCCAAAAC AATGGTTCAT GGTACTACCT AAACGCTAAT	2340
GGTTCAATGG CGACAGGATG GCTCCAATAC AATGGCTCAT GGTACTACCT AAACGCTAAT	2400
GGTTCAATGG CGACAGGATG GCTCCAATAC AATGGCTCAT GGTACTACCT AAACGCTAAT	2460
GGTGATATGG CGACAGGTTG GGTGAAAGAT GGAGATACCT GGTACTATCT TGAAGCATCA	2520

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GGTGCTATGA AAGCAAGCCA ATGGTTCAAA GTATCAGATA AATGGTACTA TGTCAATGGC	2580
TCAGGTGCCC TTGCAGTCAA CACAACGTGA GATGGCTATG GAGTCAATGC CAATGGTGAA	2640
TGGGTAAACT AAACCTAATA TAACTAGTTA ATACTGACTT CCTGTAAGAA CTCTTTAAAG	2700
TATTCCTTAC AAATACCATA TCCTTTCAGT AGATAATATA CCCTTGTAGG AAGTTTAGAT	2760
TAAAAAATAA CTCTGTAATC TCTAGCCGGA TTTATAGCGC TAGAGACTAC GGAGTTTTTT	2820
TGATGAGGAA AGAATGGCGG CATTCAAGAG GCTCTTTAAG AGAGTTACGG GTTTTAAACT	2880
ATTAAGCCTT CTCCAATTGC AAGAGGGTTT CAATCTCTGC CAGGGTGCTG GCTTGCGAAA	2940
TGGCTCCACG GAGTTTGGA GCGCCAGATG TTCCACGGAG ATAGTGAGGA GCGAGACCGC	3000
GGAATTCACG AACTGCGACG TTTTCTCCTT TGAGGTAAAT CAATCGTTTC AAGTGTTCGT	3060
AGGCGATCTT CATCTTGTCT TCAAAGGTCA AATCAGGTAG GATTCTCCTT GTTTCAAAGT	3120
AATGGTTGAT TTGGTTGAAG AGGTAAGGAT TTCCCATGGC AGCTCGGCCA ATCATGACTG	3180
CGTCAGCACC AACTTCTTCG ATGCGTTGCT TGGCTTCTTG GACAGTACGG ATATCACCGT	3240
TGGCGATGAA TGAATCTTG GTTAGAGCTT GGGCAACCTT GTAAAGGGTC TCAAGGCTG	3300
CGTGGCCAGT ATACATTGTG TCACGGGTAC GGCCATGCAT GCGAGGGCA GAAACACCTG	3360
CAGCTTCAGC AGCGAGAGCA TTTTCTACTG CAAGAGATGG GTCCGCCCAG CCGGTACGCA	3420
TTTTGACAGT AAGTGGGATA TCAAGGACAG ACTGGACCTT GTTGATGATG GAGTAAATCT	3480
TGTCTGGATC CTTGAGCCAC ATAGCACCAG CTTCTGTTCTT CACGATTTTG TTGACAGGGC	3540
AGCCCATGTT GATATCGACG ATATCGGTCT TGGTGTTCCT TTGGATGAAT TCTGCTGCGC	3600
GTGCTAGGCT GTCTTCATCG CTACCAAAAA GTTGATAGA GACAGGGTTT TCGCCCTCAT	3660
CGATATGAAG CATGTGCAGG GTTTTTTCGT TGTTGTATTG GATTCCCTTG TCAGAGACCA	3720
TTTCCATTAC AACGAGTCCA GCTCCGAGCT CCTTTGCGAT AGTACGAAAG GCTGAGTTGG	3780
TCACGCCAGC CATAGGCGCT AAAACGGTAC GATTGGGAAT CTCAATATTG CCAATCATAA	3840
AAGGTGTATT AAGATTTGTC ACGAATGAGT TCCTCCAGGT CCTTTTCATC AAAGTTGTAA	3900
GTAGTTTGGC AGAATTGACA AGTGATTCTT GCCCGTGGT CTTCCCTCTT CATTTCTCTG	3960
AAGTCTGAGC TTGGAAGGCT GGCAAGAGCG TTCATAAAGC GTTCATGGCT ACAGTCACAT	4020
TGGAAACGGA TTTCTTCTTC AGAAAGACGC TTGTAGGCTT CGTCCCCGTA GATAGCCTTG	4080
AGGAGGGCTT CGATATGGTC GTCGCTTTCG AGAAGAGTAG AGATAGCTGG CATTTCTTGG	4140
ATGCGTTTTT CAAAGCGAGC AATCTCTTCT TTCTTGGCTC CTGGCAAGAC TTGAACTAGG	4200
AAACCACCTG CAACCTTGAC CTTGTCTTCC TCGTCCAAAA GGACATTGAG GCCGACCGCT	4260
GAAGGCGTTT GTTGGCTTTC AGTAAGGTAA AAGGCAAGGT CTTACCGAT TTCTCCAGAG	4320

911

ATGAGGGGAG TTATAGAGTT GTAAGGATTT CCAGTACCGT AGTCTGTGAT AACGAGGAAT	4380
TGACCATTTTC CAACAAAAGG TCCGACTAGG ACTTCACCAG TCGCAGTCTT TTTGATGTCA	4440
ACACCAGGAT TTTGAACATA GCCTTTGACG TTCCCCTTGG TATCAGCGAC GGTGATAATA	4500
GCACCTAGAG AGCTAGATCC CAACACCTTA ACTGTAAGTT TGGTATTTCC TTTTTCATTG	4560
GCTGCGAGAA TCTGGCTAGC GATAAGAGTT CGACCAAGCG CTACAGTTGA GCTAGCTTGG	4620
GTTTGATGTT TTTCTTGAGC AGTGCGGACG GTTTCAGTGC TATCAAGGAC AAAAGCACGA	4680
AAGGcTCCGC TTTCTGATAT AGTTTAAATA ATTTTATCCA TAGCTACTAT TTTAGCATAA	4740
AAATGCCCAA AGGGGGAGCC GTGTGTTTAC TGATTTTCAG GATAATGGAC CAGGAAATCA	4800
GCATGAAAAT AAAAAGAGAA ACAGATTATT TTAGCATTTG TCAGATTAT GCTATGCTTA	4860
AGGTAGAAAA TGAAAGGGAT AACAAATGTA TTTAGGAGAT TTGATGGAGA AAGCCGAGTG	4920
TGGTCAATTT TCAATACTTT CCTTTCTATT ACAAGAGTCT CAGACGACCG TCAAGGCTGT	4980
AATGGAAGAA ACAGGATTTT CAAAAGCAAC CCTAACCAAA TATGTCACCC TGCTCAATGA	5040
CAAGGCTTTG GATAGTGGCT TAGAGCTGGC TATTCACCTA GAAGATGAAA ATCTGCGTCT	5100
GTCTATCGGT GCAGTACCA AGGGGAGAGA TATTCGGAGC TTGTTTTTGG AGAGTGCTGT	5160
TAAATACCAG ATTTTGGTTT ATCTTCTCTA CCACCAACAG TTTTtagccc ATCAGCTGGC	5220
TCAAGAATTG GTGATTAGCG AGGCTACGCT TGGTCGTCAC TTGGCTGTT TAAATCAGAT	5280
TTTGTcAGAA TTTGATTTAT CCATCCAAAA TGGCCGTGG CGAGGTCCAG AGCATCAGAT	5340
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CATGCAGAAA CCAGAGAGAA AACAGGAGAT TGCCAATTTA GAGGAAATCT GCGGTGCAAG	5460
TTTGTCTGCG GGGCAGAAAT TGGACTTGGT TCTCTGGGCT CACATCAGTC AACAAcGTCT	5520
TCGGGTCAAT GCTTGTcAGT TTCAAGTCAT AGAAGAGAAA ATGCGAGGGT ATTTTGACAA	5580
TATCTTTTAT CTTcGTTTGC TGAGAAAGGT TCCGTCCTTT TTTGCTGGGC AACATATTCC	5640
ACTAGGAGTT GAGGATGGTG AGATGATGAT ATTCTTCTCT TTTCTCCTAT CTCATCGCAT	5700
TCTTCTCTTT CATACTATGG AGTATATTCT TGGTTTTGGA GGGCAGTTGG CAGATTTACT	5760
GACGCAATTG ATTCAAGAAA TGAAGAAGGA GGAACtATTG GGGGATTATA CAGAGGACCA	5820
TGTCACCTAT GAACTCAGTC AGCTTTGTGC TCAAGTCTAT CTCTATAAGG GCTATATTTT	5880
ACAGGATCGC TACAAGTACC AGTTAGAGAA TCGTCATCCA TATTTACTGA TGGAACATGA	5940
TTTTAAAGAG ACAGCAGAGG AGATTTTCA TGCTCTACCT GCTTTTCAAC AGGGGACAGA	6000
TTTAGATAAG AAGATTCTCT GGGAATGGCT CcAGTTAATC GAATATATGG CTGAAAACGG	6060

912

TGGCCAGCAT ATGCGGATTG GTCTGGATTT GACATCTGGT TTTCTTGCTCT TTTCAAGGAT	6120
GGCAGCCATT TTGAAACGGT ATTTGGAATA CAATCGTTTT ATTACCATTG AAGCTTATGA	6180
CCCTAGTCGG CATTATGATT TGCTGGTTAC CAATAACCCG ATTCATAAGA AGGAACAGAC	6240
ACCAGTCTAT TATTTAAAA ATGACTTGGA TATGGAGGAT TTGGTAGCGA TTCGCCAGTT	6300
ATTATTCACT TAAAAGGCTT GGTTAATCCA GGTCTTTTTT GTGAAATCA CACAATCTCC	6360
TCACATTTTT TTA AAAAATTA AAAAAAGTTG ATAAACAAGA AAGCGCTTTA TTTTGTATAC	6420
TAGTAAGTGT AAAGAGGAAA CACCTCAAGA TCTTTATCAG GAGGACAGTA CATGTCACAA	6480
GAAAAATACA TCATGGCCAT TGACCAGGGA ACTACAAGTT CTCGTGCCAT CATTTTCAAC	6540
AAAAAAGGGG AAAAGGTTAG CTCGAGTCAA AAAGAGTTTA CCCAGATTTT CCCTCAGGCA	6600
GGTTGGGTTG AGCACAATGC CAATGAAATT TGGAACTCTG TTCAGTCAGT TATTGCGGGT	6660
GCTTTCATCG AAAGTGCTGT CAAGCCAAAT CAAATCGAGG CAATCGGGAT TACCAACCAA	6720
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TACTCAAATG CAGCTCGTAC CATGCTTTAT AACATTAAAG AACTCAAATG GGATGATGAG	7080
ATTTTGGAAA TCCTTAACAT TCCGAAGGCT ATACTTCCAG AAGTTCGTTC TAACTCCGAA	7140
ATCTACGGCA AGACAGCTCC ATTCCATTTC TACGGTGGAG AGGTGCCAAT CTCAGGTATG	7200
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GAAAACAACC TCTTGACAAC CATTGGTTAC GGAATCAACG GTAAGGTTTA TTATGCCTTG	7380
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GTGAAAATT CACCAGAATC TGAAAAATAC GCTCGTGATT CTCACAACAA CGATGAAGTT	7500
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TCTATTGCTT ATCAAGTGCG TGATATCATC GACACCATGC AAGTGGATAC TCAGACCGCC	7680
ATTCAAGTAC TGAAGGTGGA TGGTGGTGCA GCCATGAACA ACTTCCTCAT GCAGTTCCAG	7740
GCGGATATTT TAGGCATTGA CATTGCACGT GCTAAAAACC TGGAAACAAC AGCTCTAGGA	7800
GCGGCCTTCC TAGCAGGTTT GTCAGTAGGG TACTGGAAAG ACTTGGACGA GTTGAAACTC	7860

913

TTGAACGAGA CAGGAGAACT CTTTGAGCCA TCTATGAACG AATCTCGCAA GGAACAACTC	7920
TACAAGGGCT GGAAGAAGGC TGTGAAAGCA ACTCAAGTCT TTGCGGAAGT AGACGACTAA	7980
TACTGGCAGA ATAAAGCGAT TTATTTAGAA AGTGTGTAAA TATGGAATTT TCAAAGAAAA	8040
CACGTGAATT GTCAATTAAA AAAATGCAGG AACGTACCCT GGACCTCTTG ATTATCGGTG	8100
GAGGAATCAC AGGAGCTGGT GTAGCCTTGC AGGCGGCAGC TAGCGGTCTT GAGACTGGTT	8160
TGATTGAAAT GCAAGACTTT GCAGAAGGAA CATCTAGTCG TTCAACAAAA TTGGTTCACG	8220
GAGGACTTCG TTACCTCAAA CAATTTGACG TAGAAGTGGT CTCAGATACG GTTTCTGAAC	8280
GTGCAGTGGT TCAACAAATC GCTCCACACA TTCCAAAATC AGATCCAATG CTCTTACCAG	8340
TTTACGATGA AGATGGAGCA ACCTTTAGCC TCTTCCGTCT TAAAGTAGCC ATGGACTTGT	8400
ACGACCTCTT GGCAGGTGTT AGCAACACAC CAGCTGCGAA CAAGGTTTTG AGCAAGGATC	8460
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GTCTGGTTAT TAATACAACA GGTCCCTTGA GTGATAAAGT ACGTAATTTG TCTAATAAGG	8760
GAACGCAATT CTCACAAATG CGCCCACTA AGGGAGTTCA CTTGGTAGTA GATTCAAGCA	8820
AAATCAAGGT TTCACAGCCA GTTTACTTCG ACACAGGTTT GGGTGACGGT CGTATGGTCT	8880
TTGTTCTCCC ACGTGAAAAC AAGACTTACT TTGGTACAAC TGATACAGAC TACACAGGTG	8940
ATTTGGAGCA TCCAAAAGTA ACTCAAGAAG ATGTAGATTA TCTACTTGGC ATTTGTCAACA	9000
ACCGCTTCCC AGAATCCAAC ATCACCATTG ATGATATCGA AAGCAGCTGG GCAGGTCTTC	9060
GTCCATTGAT TGCAGGGAAC AGTGCCTCTG ACTATAATGG TGGAAATAAC GGTACCATCA	9120
GTGATGAAAG CTTTGACAAC TTGATTGCGA CTGTTGAATC TTATCTCTCC AAAGAAAAAA	9180
CACGTGAAGA TGTTGAGTCT GCTGTCAGCA AGCTTGAAAG TAGCACATCT GAGAAACATT	9240
TGGATCCATC TGCAGTTTCT CGTGGGTCTA GCTTGGACCG TGATGACAAT GGTCTCTTGA	9300
CTCTTGCTGG TGGTAAAATC ACAGACTACC GTAAGATGGC TGAAGGAGCT ATGGAGCGCG	9360
TGGTTGACAT CCTCAAAGCA GAATTTGACC GTAGCTTTAA ATTGATCAAT TCTAAAACCTT	9420
ACCCTGTTTC AGGTGGAGAA TTGAACCCAG CAAATGTGGA TTCAGAAATC GAAGCCTTTG	9480
CGCAACTTGG AGTATCACGT GGTTTGGATA GCAAGGAAGC TCACTATCTG GCAAATCTTT	9540
ACGGTTCAAA TGCACCGAAA GTCTTTGCAC TTGCTCACAG CTTGGAACAA GCGCCAGGAC	9600

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TCAGCTTGGC AGATACTTTG TCCCTTCACT ATGCAATGCG CAATGAGTTG ACTCTTAGCC	9660
CAGTTGACTT CCTTCTTCGT CGTACCAATC ACATGCTCTT TATGCGTGAT AGCTTGATA	9720
GTATCGTTGA GCCAATTTTG GATGAAATGG GACGATTCTA TGA CTGGACA GAAGAAGAAA	9780
AAGCAACTTA CCGTGCTGAT GTCGAAGCAG CTCTCGCTAA CAACGATTTA GCAGAATTAA	9840
AAAATTAAGA AAAAATAAAA GAGGTGGAGG GCAGCATTC TGTGCGCCG TCCCTTCTTT	9900
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TGATTCTTCT AGGAAATGGT GTTGTTCAG GTGTGGTTCT TCCTAAAACC AAGAGCAATA	10020
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TATCTGGCAA GCTCAGTCCA GCTTATTTAA ACCCAGCTGT GACCATCGGT GTGGCCTTAA	10140
AAGGTGGTTT GCCTTGGGCT TCCGTTTTGC CTATATCTT AGCCCAGTTC GCAGGGGCCA	10200
TGCTGGGTCA GATTTTGGTT TGGTTGCAAT TCAAACCTCA CTATGAGGCA GAAGAAAATG	10260
CAGGCAATAT CCTGGCAACC TTCAGTACTG GACCAGCCAT CAAGGATACT GTATCAAACT	10320
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ACGACTTTCA GGCAGGTATC GGAACCTTTG CAGTGGGAAC TTTGATTGTC GGTATCGGTC	10440
TATCACTAGG TGGGACAACA GGTATGCCT TGAACCCAGC TCGTGACCTT GGACCTCGTA	10500
TCATGCACAG CATCTTGCCA ATTCCAAACA AGGGAGACGG AGACTGGTCT TACGCTTGA	10560
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TACAGCTTGC GGCTAGCTTC CTAGTTTGCT CTTTGATTTT CATTGAGTAT TAGAAAACAA	10740
TTATGTTGAT AGAGCTTGGG CAAGAGCCCA ATTTAGCAA AAAATGAAGT AAATCTTCTC	10800
ATAATAAAC GCATCATATC AAGCACGAAA ATTCCACGAG GTCAACTACA GTCAGAAAGC	10860
TGAACAACAA GCCAAAACGC CCAAAAAAGG CGGCAAAAAG CAAGCACCTG CAAGCAACGT	10920
GCCGAAATGG TCAAATCCTG ATTATGTCAA CGAATTAGAC CCAAAAATCG TTGATATGCT	10980
AGTAGAATTT CACAAGTCAC AAGGCACTTT GGAACTCCC GAGGCGCAAG CAGAAATCGC	11040
CCAAAAACGT GAAGAAATCG AGCAAAGGAG AGCTGAGCTT GAGGGTAAAA AACAAGAGCT	11100
TTTGAACCGC TTGAACAAAT AGAGTTTCGC AAGTATTATG CTTACAAATT ACTTGAGCAA	11160
TTAACTAAAA TATAAACCTT GCCTTTATAT CTAGGCAGGG TTTATATTTT AGAAATTCAC	11220
GTAGGTTGTT ACGGTTTTTA CATACCCAGT ATAGTTTGAG TTTCTATAGT ATTCAGTGAT	11280
AAACTTCCAT TTTCTTTGAG CAACATGGAT ATAAGTACTT GTTATGTAGT ATGGATATGG	11340
GCTTTGTGAA TCCAAGTAAG ACTGATAAGC TTGTATACCA AAATATGCTC CACCAATTAT	11400

915

TGCACCCCAT GGACCCCCCA ATAAAGCACC TATCCTACCA ATCATATAAC TGATTCCAGC	11460
ACCAGTCATG AAGTTAGCGA ATGTGTTAGC TTGTTTATTC CCATGTATTG TGTTGACGTA	11520
ATTCCAAACA TTAGGATCGT ATGATCTAAA AGATATATTT AGGTCGATTT CATTCCTTTG	11580
ATAAGCCATA TAAAATGCCC CATTGATATA GACGCCGTCA GCACGTCGTT CAATAGTGTC	11640
TACACTTCCA TCTGGATTGA CAACCTCAAG AACTTCATCG CTTAAAATAT TTA CTGCGT	11700
ATCTCCGAAC CGCACTGATG AGCCATTCTC AAACCTGAGCC TCACCAGATA CAACCTTTAGA	11760
GTTTGCCGAT AAGCTATCAT CAGCAAAAAC AAACAAGCGA CGGGGAAATG CTAGACATAC	11820
AGAAAACAGA CATAACTAGC AAACACATGC ATTTAAACAT CTTAGACATA ACGGAAACTC	11880
CTTTGTATTT TTGATTTTTT TCAACTTTTA TTATACAATA AAACCAAATA AAAAGAAAGC	11940
GGTAACAATA TGCTTAATGC GAAAATTTTT TATATATTTT TATGTTTGAT CGTTATCGAA	12000
ACTACAGGCT TGTGTTGTTT GAAAAGAGGT CTCGAAATGG GTTATTTAGA CACAGAAGCT	12060
ATTATCCTCG CAGTTTTTTC ATTTGCTTTT TACAACCTAT GTTCATTTCG TTGGGTCTGC	12120
TCTACAATAA AAAACAATAA AAAATAAATA GACGTATTTT CAAAAAAAC maAATGCATA	12180
TTTATATTAG CAAAACGACG ATTTAAATCG TCGTTTTTTT GTAGTACGAC GGGCATGTCG	12240
TATATCTGAG GTGTAAGTCC TCAGCCTGAC TATCGTGAGG TAGCAGGGAG AGGAAGGGAT	12300
AGCGAAATCG TGGCTCTACG AACAGGAACG TGATAGTAAG GCGTATATAG CGGATAAGGA	12360
GGCTTCAAAC TCTAAAGTCC AAAAAGGTAG TCGTAACCTA TATGTGTAAA TCACGAGAGT	12420
AATTGAATTC GGAATAAGGT TTGTGTGAAA AAGATAAATC TTTCTAGAGT CTAAAGACTC	12480
TGCGTCAGAT TTCCTATTTT CACTGTAACC TTTTAACGTC CTCATATCTT GTATAAACGA	12540
GGAAAGATGT ACGACTTATC CCGTGAGGTT TCATGAGCGT GAAAGCGTAG TAACAACGAA	12600
TCATGAGAAG TCAGCCGAGC CCATAGTAGT GAGGAAACTT CCGTAATGGA AGTGGAGCGA	12660
AGGGG	12665

(2) INFORMATION FOR SEQ ID NO: 135:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 5305 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 135:

CGCTAATCAC TACAATCATT TTATTGTACT TTTTCACTCT CAAGAAAAGC AAGAAGTATT	60
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916

CATTTTAGTT TCATTTAGTA TTATTTTGCA TACCTAAAAT ACAGTAAAAA ATCAGTCATC	120
TTGGTATGCT CCTGCTTTCA CTATTCAACA CGTTTTTGAC TTATACTAGG CTCATTTCCA	180
AAAGCATTAT ATAATAGTGA TATGAAACCA ACTAAACTAA ACAAGAAATA TAAGCAATAA	240
AAATTCGTTT AAAAGATCTT ACTAAAGCTA ATACTAAATA AAAATAAAAG AGTAAACTAG	300
GAAGTTTATT TCAAACAACC TAAAATACTG ATTTTCGGCT GAAGATAATA CTGGAGTGCA	360
AATTAATGGG GTTATAATAA ATAGCTGATA GCTTGTGTTG GTTTTGGATT TTTTAAGAGT	420
AGATGAGTAT TAAACTATA AGGAGGACGA AGGTGGCTAA AAATTTAAAA TTTAAATTAG	480
CTCGGGTAGA GCGTGATTTA ACACAAGGTC AACTGGCAGA GGCTGTCGGG GTGACACGCC	540
AGACTATTGG TTTAATAGAG GCGGGAAAAT ACAATCCCAG TCTCTCGCTC TGCCAGTCTA	600
TTTGCAGATG TTTAGGAAA ACCCTAGACC AACTATTTTG GGAGGAAGAA GATGAAAAAT	660
AGATTTTATT ATTCTCAATT ACTAGACGAA AGAGAAGAAC AACTGTTCAA TAAAGCGGGC	720
TCTGAAAGTT TCTATATCTG CATTGCTTTG TCGCTCCTAT CTTATATCAT TTCAGTATTA	780
GCACCAAGCC TTTTAAATTC TAATATGCTG CTAATCGTTA TCATCATAGG GACATTTTAC	840
TTTTTCAATC GTGCCCGTTA TCTGGGAGTG ACCTACTATG GTCGTTTTCA TTTTACGATT	900
TTGGGTGTT TTTTCCTAAC CTTGGCTATT ACGGCTCTTT TGATGTTGCA GAATTATCAA	960
TTCAACATAG AAATTTATCA GCACAATCCT TTGAATTTTA AATACCTGTC TGCTTGGGTC	1020
ATTACTTATA TCATTTACCT TCCGTGGATC TTTATTGGCA ATCTTGGTCT TAAGAGCTAT	1080
GGCGAATGGG CTCAGAAAAA ATTTGAACAA GATATGGATG AATTGGAGAG TGGAGAATAG	1140
CTTGTTACTC TTTTCTCAAT CCAGCTAAAA TGTGATATAA TAGTACTAAT TTATTGGAAT	1200
ACATGAAAGT TCTTGAAAAT TTTTATGGGT TTCTAGCTAA GGAAGTAGGA AAAGTATGTA	1260
TCCAGATGAT AGTTTGACAT TGCACACGGA CTTGTACCAG ATCAACATGA TGCAGGTTTA	1320
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CTTGGATTAC CTTGCAATT TCAAGTTGGA GTTGACCGTT CGTTCTGCCC AAGAAGGGGA	1560
TTTGGTTTTT GCTAATGAAC CGATTGTGCA GGTGGAAGGA CCTCTAGCCC AATGTCAGTT	1620
GGTCGAAACG GCTCTTTTGA ACATCGTCAA CTACCAGACT TTGGTGGCGA CGAAGGCAGC	1680
TCGTATTCGT TCGGTTATCG AAGATGAACC CTTGATGGAG TTTGGGACAC GTCGGGCTCA	1740
AGAAATGGAT GCGGCCATCT GGGGAACACG CGCAGCTGTG ATTGGTGGCG CCAATGGAAC	1800
CAGCAACGTG CGTGCGGGTA AGCTCTTTGA CATTCCTGTT TTGGGAACCC ATGCCCATGC	1860

917

CTTGGTACAG GTTTATGGCA ATGACTATGA AGCTTTCAAG GCTTACGCTG CGACCCACAA	1920
AAATTGTGTC TTTCTTGTGG ATACCTATGA CACCCCTCGC ATCGGTGTAC CAGCTGCCAT	1980
TCAGGTGGCG CGTGAGCTGG GTGATCAGAT TAACTTTATG GGTGTGCGGA TTGACTCTGG	2040
GGATATTGCC TACATTTCTA AGAAAGTCCG TCAGCAACTG GATGAGGCTG GATTTACAGA	2100
GGCTAAGATT TATGCTTCTA ATGATCTAGA TGAAAATACC ATCCTTAACC TCAAGATGCA	2160
AAAGGCCAAG ATTGATGTCT GGGGTGTGGG TACCAAGCTG ATTACAGCCT ATGACCAGCC	2220
GGCTCTTGGG GCGGTTTACA AGATTGTTGC AATCGAAGAT GAAACTGGTC AGATGCGCAA	2280
TACGATTAAG CTGTCTAATA ATGCTGAAAA AGTTTCTACG CCAGGTAAGA AGCAGGTGTG	2340
GCGCATTAAC AGTCGTGAAA AAGGCAAGTC AGAAGGCGAC TATATCACTT ATGATGGTGT	2400
GGATATTAGC GACATGACAG AAATCAAGAT GTTCCATCCG ACCTATACAT ACATCAAGAA	2460
GACGGTTCGT AATTTTGATG CCGTTCCTCT CTTGGTGGAT ATCTTCAAAG AAGGAATATT	2520
AGTTTACAAC TTGCCTAGTT TGA CTGACAT TCAGGATTAT GCCCGTAAGG AATTTGACAA	2580
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ATTGATGCCC AGGAAGAAAT CCGTCGTTCT ATTGATTCT TAAAAAGATA TCTGAAAAAA	2820
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GGACGTTTGG CGCAATTAGC TATGGAAGAA CTGCGAGCTG AAACGGGAGA CGATAGCTAC	2940
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GTCATTGGAA CAGACCACGC CGCGGAAAAT ATCACAGGTT TCTTTACCAA GTTTGGTGAC	3240
GGCGGTGCGG ATATTCTCCC TCTTTACCGC CTCAATAAAC GCCAAGGAAA ACAGCTCTTG	3300
CAGAAACTTG GCGCAGAGCC AGCCCTTTAT GAAAAATCC CAACGGCAGA CCTAGAAGAA	3360
GATAAACCAG GCCTAGCTGA CGAAGTCGCA CTTGGAGTCA CCTACGCAGA GATTGACGAC	3420
TACCTAGAAG GCAAAACAAT CAGCCCAGAA GCTCAAGCGA CCATTGAAAA CTGGTGGCAC	3480
AAAGGCCAAC ACAAACGCCA CTTACCCATC ACCGTATTTG ATGACTTTTG GGAGTAAAAA	3540
GGTCCGGGGG ACCTTTT TAG CTTCTTGCCC TGAAATTAAA AAGCAAGAAA AACCTCCACT	3600

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GGAGGTTTTC AGCCTCTCAT CTTGAAATAA GAAAGTGAGA GAAGGTCTGG GGGATCTTGA	3660
ACCCCGAGTT TAGAAATAAG AAAATGAGGC AGATTCAGTA ACTCGAAGAG TTCGATTTCA	3720
TCGTCTTACC CCTGCAACGA TGACTAGGTT TGA AAAAGCT TGCTAGAGCG CATTTCAAAC	3780
CAGGCAGCAA CTGCGTCAAG AAATTAGAAG ACAAACTCGT TTTCTAGCTG TTA CTGAGTT	3840
GAGCCTTTTT ACTACGAGTA TAGAAATAAG GAAGTGAGGT AGCATCATGA AATCTATCGG	3900
TACGCAAATA TTACAGACAG AACGTTTGAT TTTAAGAAGA TTTGTGGAGA GTGATGCAGA	3960
AGCCATGTTT CAAAATTGGG CTTTCATCCG TGAGAATCTG ACCTATGTTA CCTGGGATCC	4020
CCATCCTGAT GTCGAAATCA CTCGAACTC GATTTCGAAT TGGGTTGCTT CCTATACTAA	4080
TCTCAACTAT TATAAATGGG CCATTTGTCT AAAAGAAAAC CCAGAGCAAG TAATAGGAGA	4140
TATCAGCATT GTTAAGATAG ACGAGGCTGA TTTAAGCTGT GAAATTGGCT ATGTGTTAGG	4200
CAAGGCTTAC TGGGGAAATG GTATGATGAC AGAGACTTTG AAAGCTATCT TGGACTTTTG	4260
TTT TACTCAA GCAGGTTTTC AAAAGGTCAG AGCACGTTAT GCCAGTCTCA ACCCAGCTTC	4320
AGGTCGTGTC ATGGAAAAGG CTGGAATGTC CTATCTACAA ACCATTGTTA ATGGTG TAGA	4380
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CTGTTGT TAA ATTTAAAATA GAATCCTCTA TCGAGTTAGG GAATTAAATT CAACCAATTT	4740
TATTCATGTT TTTCTATCA AATTATCTAA TATTAAAATA GTCTCAT TCT GATGAGAAAA	4800
CTATTTCCAA ATCATTCATA CCTCTCTCAA CTAGATGTAA CTTACAAAAC CCCTGACCTC	4860
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TCATCTCGAC TGTTCTTTAA TGCATCATTA ACGACGCTTT TCTTCTAGGT GGTTCATAAG	5040
GAACAGGAAG ATTCAGGTTG ACTTTTCTAA TCCTAGAATA AAGTGCTGAA AACAATTCGG	5100
AATAGGCATA GAGACTAGAC AATTGAGGA GCTGCTTGCG TCCTGTTTCA ACACATTTTC	5160
CCACCACGTG AAGAAAAAGA TGGCGGAAGC GTTTGATTGT TAAAGTTTGG AAGTCACCTC	5220
CAGCTAGATG TTTGAGAAAA AGATAGAGAT TGTAGGCGAT ACAGCTCATC ATCATACGAA	5280
CTTCGTTTTT GATTAAGGTT GAACT	5305

(2) INFORMATION FOR SEQ ID NO: 136:

919

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 3964 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 136:

TGGCAGCTCG TCGTCGTAAA GGACGCAAAG TTTTGGCTGC ATAATCCAAA CGAATTCTAT	60
CAAAAATCAG TAGGAACTCG AGTCTACTGA TTTTATTTT TGTA AAAAAG TTCAGTAGAT	120
GCAAAATGGAT TCGGAAGCGA TGTTACAGTA GATTGAACT AGAATAGTAC ACCTCTGTTT	180
CTAAAACATT GTTAGAAATC GATTTGACTG TCCTGATCGA TTTGTCCTGT TATTATTTTA	240
TTTACTATA AAGTTGAAGT AGGTGGAGAT GGTACAGCAA CAATCGTCTT TAAAGATGGT	300
TCAGCTATTA CAATTCCAGG AAATCAATTG GTAGCACAAG ATCCAAAAGC ACAAGATAGC	360
ACTAACTGA CTGCTGAAAA ATCAACTGTT AAAGCACCTG CTCAAAGAGT AGATGTAAAA	420
GATATAACTC ATTTAACAGA TGAAGAAAA GTTAAGGTTG CTATTTTACA AGCAAATGGT	480
TCAGCATTAG ACGGAGCGAC AATCAATGTA GCTGGAGATG GTACAGCAAC AATCACATTC	540
CCAGATGGTT CAGTAGTGAC GATTCTAGGA AAAGATACAG TTCAACAATC TCGGAAAGGT	600
GAATCTGTAA CTCAAGAAGC TACACCAGAG TATAAGCTAG AAAATACACC AGGTGGAGAT	660
AAGGGAGGCA ATACTGGAAG CTCAGATGCT AATGCGAATG AAGGCGGTGG TAGCCAGGCG	720
GGTGGATCAG CTCACACAGG TTCACAAAAC TCAGTCAAT CACAAGCTTC TAAGCAATTA	780
GCTACTGAAA AAGAATCAGC TAAAAATGCC ATTGAAAAAG CAGCCAAGGA CAAGCAGGAT	840
GAAATCAAAG GCGCACCGCT TTCTGATAAA GAAAAAGCAG AACTTTTAGC AAGAGTGGAA	900
GCAGAAAAAC AAGCAGCTCT CAAAGAGATT GAAAAATGCGA AACTATGGA AGATGTGAAG	960
GAAGCAGAAA CGATTGGAGT GCAAGCCATT GCCATGGTTA CAGTTCCTAA GAGACCAGTG	1020
GCTCCTAATG CTGCTCCTAA GACAACAAGT GCACCGCAAG CAACTGCAGG AACAATGCAA	1080
GATGTTACCT ACCAGTCACC TGCTGGCAAA CAATTACCTA ACACAGGTTC AGCATCAAGT	1140
GCAGCACTTG CTAGTCTTGG TCTAGTGGTG GCAACAAGTG GTTTTGCTTT GCTAGGAAGA	1200
AAGACTAGAC GTAGAAAATA GAACAGCTAG AAAATTCTAT TCTCTACTTA AAGTTAGATT	1260
ATAAGGGGGA TTTTGAGAAG TCATCAATCC TAGTGATGGG TGAGAAAAGT GAGAACCCAA	1320
GATAATCACA TACTTTAGCT GAATAGGAAT ATTCTATCAA TGTAGCCAAT CTCTTCTGTC	1380
TCTAACTGTG GAATAGGAGA TGGGCAATAT CGGATAGAAA AGATAGCAGA ATAGCTCTCT	1440

920					
ATTGAAGAGA	GGAGGGGAAA	CCGAAAAATT	AGGTGCCCCCT	CCTCTTTTTT	GGTATAATAG
AAGATAGAAA	ACGAGGTTAG	AAGAGATGAT	TTTTGATACA	CATACACACT	TGAATGTAGA
AGAATTGCA	GGTCGTGAGG	CAGAAGAAAT	TGCCTTGGCT	GCTGAGATGG	GTGTGACACA
GATGAATATT	GTTGGTTTTG	ATAAACCGAC	GATTGAGCAT	GCCTTGGAGT	TGGTAGATGA
GTATGAGCAG	CTCTATGCGA	CTATTGGTTG	GCATCCTACA	GAAGCTGGTA	CTTATACAGA
GGAAGTTGAG	GCTTACTTGT	TGGATAAGTT	AAAACATTCC	AAGGTTGTGG	CTTTAGGTGA
AATTGGCTTA	GATTACCATT	GGATGACAGC	GCCCAAAGAG	GTGCAGGAGC	AGGTTTTTCG
CCGTCAGATT	CAGCTATCTA	AGGACTTGGA	TTTGCCTTTT	GTGTCCATA	CCCGTGATGC
GCTGGAAGAT	ACCTATGAGA	TTATCAAGAG	TGAGGGCGTT	GGTCCTCGTG	GTGGTATCAT
GCATTCAATTT	TCAGGGACGC	TTGAGTGGGC	AGAGAAGTTT	GTGGATCTTG	GTATGACCAT
TTCCTTCTCA	GGAGTGGTGA	CTTTTAAGAA	GGCAACTGAC	CTCCAAGAAG	CAGCTAAAGA
GTTACCTTTG	GACAAGATGT	TGGTGGA AAC	AGATGCGCCT	TACTTAGCAC	CTGTACCCAA
GCGTGGTCGT	GAAAATAAAA	CAGCCTATAC	TCGCTATGTG	GTCGACTTTA	TCGCTGACTT
GCGTGGTATG	ACGACAGAAG	AGCTGGCGGT	AGCAACGACT	GCAAATGCAG	AACGAATTTT
TGGACTGGAC	AGCAAGTAAT	GAAACAGAAA	ATTTCTCAAG	TTATCGTGGT	TGAAGGGCGT
GATGATACGG	TCAATCTCAA	ACGTTATTTT	GATGTGGAGA	CCTATGAGAC	TCGAGGTTCT
GCCATCAATG	CTCAGGATAT	AGAGCGGATT	CAGCGCCTGC	ACCAACGTCA	TGGAGTCATT
GTCTTTACAG	ACCCAGATTT	TAATGGGGAA	CGGATTCCGC	GCATGATCAT	GATGGTCATT
CCAACAGTTC	AGCATGCCTT	TCTCAAGCGA	GATGAAGCTG	TTCCCAAGTC	CAAGACCAAG
GGGCGTTCTC	TGGGAATTGA	GCATGCCAGC	TATGAAGACC	TGAAAACGGC	TCTAGCTCAA
GTGACAGAAC	AATTTGAACA	TGAGAGTCAG	TTTGACATTA	GTCGTAGCGA	TTTGATTTCG
CTTGGTTTTT	TAGCAGGGGC	AGACAGCCGT	AAGCGTAGAG	AATATCTCGG	AGAGACTCTC
CGAATCGGCT	ATTCCAACGG	CAAGCAACTC	CTCAAACGCC	TAGAGTTGTT	TGGGGTTACT
TTGGCAGAAG	TGGAAGAAGC	TATGAAATCT	TATGAGTAGG	AAAGATGTAG	CCGTTACAAT
TTTTTAAGTT	TCACAGTATT	TTTCGAAGCA	GGTAGAAGAG	GAGGCGTCTG	ATGTTAATTG
GTCAAAAAAT	TAAAGAGATT	CGGATAGAAA	AAGGAATTAG	TCGTCCAGAT	TTTTGTGGAG
ATGAGCAAGA	ACTGACAGTT	CGTCAACTGT	CGCGAATTGA	AAGTGGAGCT	TCGCAACCGA
GTTTGCCCAA	GTTAGACTAT	ATTGCTCGCC	GGCTAGGAGT	TCCAGTTTAT	AGCCTTATGC
CGGATTTTTT	AGCTCTTCCT	TCTGCTTATT	TAGAATTGAA	ATACCAGATT	TTACGTGAAC
CAATCTATGG	TAAAGAAGAG	GAGTACGATA	AGAAGGAAGC	GTGTTTGGA	GAGATTTATA

921

AAACATACTT TGATAATCTT CCTAAAGAAG AACAAATTAGC ATGTGAAGTA TTGCAGGCGT	3300
GTTTGGATAC TTCTAGAACT AGAAGGCCTG AATATGCAGA GTTAATACTT GAGGAACATA	3360
TGCCTCAGAT TATAGAAAA GAAGCTTATT CAATAAATGA TATGTTGTTG ATTCGTTTGT	3420
TTTTTTATCA AATGCTCAT T AGAAAAGATC TTGCCAAATT TATAAATCAA ATCGAAAAGC	3480
TAATGCTCTT TCTTTTGGAA CAGAAGAAGG TAACTCAAAT AGAGAATTAC TTTATAATTA	3540
GAGATACTCT TATTTCAGGA ATGTGTTGTC TTGAAAAGGT AGGAGTAACT GATTGTTTTA	3600
ATGATTATCT ATCGTGTTTA CAAGAAATTA TGGATAAAAC TCAAGATTAT CAAAAGAAAC	3660
CTCTTGATTT TATGTTTTTG TGGGAAGCAAG CATTAAAGAGA AGAAAGAGAT TTTAGTTTAG	3720
CTGAATCATT TTATCAGTCT TCTAAAACAT TTGCGCAGCT AATTGGAGAT GAATTTCTAG	3780
TAAAGAAATT GACAGAGGAA TGGCAAGAGG ATGTCAAAAA ATATTTATAA ACATAGTGAA	3840
TCAGTGACAA AGATGTCCTT GTCCTCGTAT CAAAACAGTT CTAAAGTTCG TCTTTAGGGA	3900
TGTTTTTTTA GATATAAGCT AAAAATGACA CGAAATGGTT AGATTTTAAG GACATTGATG	3960
TCCG	3964

(2) INFORMATION FOR SEQ ID NO: 137:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 12666 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 137:

TGAGACCGTT ATTTGTATTA GGGAAATGGG TATCTATTTT TAATGCTGTG GGGATTTTGA	60
TTGTTTCTAT TATTCAAACC AAAAGCTTGT CAGGTATTGG AGCAGGATTG TTTAATCTAT	120
ATAACATTTT ATCTTATATA GGTGATTTAG TTAGTTTCAC TCGATTGATG GCATTAGGAT	180
TATCTGGAGC AAGTATAGCA TCAGCTTTCA ATTTAATTGT TGGTTTGT TT CCGGGAATAT	240
TGGCTAAACT GACAATTGGA TTAGTATTAT TCATTCTTTT ACATGCGATC AATATTTTTC	300
TATCGTACT ATCAGGATAT GTTCATGGAG CACGTCTGAT ATTTGTTGAA TTTTGTGTA	360
AGTTTTATGA GGGTGGAGGA AAACCATTTT AACCTTTGAA GGCTTCTGAG AAATATATTA	420
AGGTATTAC AAAGAATTAA TGGAGGATAT ATATAATGGA ACATTTAGCA ACTTATTTTT	480
CAACCTATGG AGGAGCTTTC TTCGCTGCAT TGGGAATTGT ATTGGCGGTT GGATTAAGCG	540
GTATGGGGTC TGCTTATGGA GTTGGTAAGG CTGGGCAATC TGCCGCAGCT TTAAGTAAAG	600

922

AACAGCCTGA AAAGTTTGCC TCAGCTTTGA TATTGCAATT ATTGCCCGGA ACACAAGGAT	660
TATATGGTTT TGTATTGGGA ATTTTAATTT GGTGCAATT AACTCCAGAA CTTCTTTTAG	720
AAAAAGGCGT TGCTTATTTT TTTGTAGCTC TTCCAATTGC TATTGTAGGA TACTTTTCAG	780
CTAAGCATCA AGGAAATGTA GCAGTAGCGG GAATGCAAAT CTTGGCTAAA AGACCAAAAG	840
AATTCATGAA GGGAGCAATT TTAGCTGCCA TGGTAGAAAC CTATGCAATT CTTGCTTTTG	900
TCGTATCATT CATTTTGACC CTTCGTGTAT AAGAAATAAA TTTGCAATTC AAAGGAGGTG	960
TCTAAATGAG CAATTTAGAA AACTTACGAG AGTCTGTTAT TGAACAAGCT CATGAAAAAG	1020
GGCGTATGAA ATTATTGGAT TCCAAAAAGA AGATTGATGA TGAATTTGAA ATGCAAAAGT	1080
CGCTCATTAT AAAGAAAAAA GAAGCTGAAC ATGAACGAAA GTTAAAAGAA TTGCAACAGA	1140
AATATCAAAT AATTTTTCAA CAATTAATAA ATAAGGAACG CCAATCAACG TTAGTATCAA	1200
AACAGAAAAT ATTAAGAAAG CTTTTTCAAT CTGCTTTACT AGAAATGGAA TCTTGGAGTG	1260
CAGATAAAGA AATGGAGTTC ATCTATCGAA TTCTGGAACG ATATTCACAA CAAGAGGTCA	1320
TAGTAACCTT TGGGGAACGG ACTTTAGCTA AATTCAATTT GGAACAATTA GAGAAATTGA	1380
AATTCTCTTT TCCAAATTAT TTATTTAGTG AACAACTAT CTCAAATGAA TCAGGCTTAC	1440
TTATTTCAAT AGGTAAAATT GATGATAACT ATTTGTATAA AACATTAATT GGATCGATTT	1500
CTAAGGAAGA AAGTTCAAGT ATCGCAAATC AAATTTTAT CAATTAAGGA TGAAATTGGT	1560
TAATCCTTCT TAGAAATTG GAGTATTCCA ATAAAATTAG AAAGGTATTT TATGGATACT	1620
AATCTTTTTT CAAAAATAAA TACGACGATT TCGGTAAAAG AAAACGATTT TATTACAGAA	1680
GAAAAATTC AAAAAATTAT ACAATCCAAA GATACGGAGA CATTGGCATT TATCTTAGAA	1740
TCAACTCCCT ATCATTTATC GATTGACATC TTAGAAGATC CTAGTCAGAC AGAGATTTCTG	1800
CTAATGACAA AATTAGTCAA TGATTATAGA TGGGCCTATG CTGAAAGTCC GTCTGATATA	1860
ATTGTGACTT TATTTGCTTT ACGATATGTT TATCATAATA TCAAAGTTT ATTAATACT	1920
AAGGCGGCAA TTAAGAAAGA TTTTCTAAA TTATTAATTC CAATAGGGAT TTTTGATATA	1980
GAAAGTTTAA AACATTTAGT TTCTTCCTTA CATTGAGATA CACTTCCTGA TTTTATGGTT	2040
CGTGAAGTAG AATCAATTG GAATGAGTAT GAAACTTTTA ATAATATTCG TGTACTTGAT	2100
GTCGGAGCTG ATCTAGCATA TTTTAAACAT CTGAACTTT TATCTAATGA GTTAGATGAG	2160
GTACTGTCTC AGGTATTGTT CGAAATGATT GACTTTTATA ATATTATTAC TGTAAAACGT	2220
GGTTTATCTC AAAATAAGAG TCATGGGGAT ATTTTACAAT TACTTTCAGA TGAAGGAAGT	2280
ATTTCTGCTA AAGAATTTAT ATACATTGTA GAAAATCAAG AAATATTTGT GTGGTTCAAT	2340
AAAATAAATC CAAGCTTAGA TTCAATCTTT TCAACTTATG AATTGAAGAT GCAGGACGCA	2400

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ACAATTTTCAT CTTCTGAGTT AGAATTTTTA TGTGATTTAC TATTGTATAA AACTTTAGAT	2460
CAAGGAAGGT ACAATGTAGA GGGGCCGTTA GTTCTTGCTA GATATTTATT GGGATGTGAG	2520
TTTGAAGTAA AGAATCTCAG AATGATCATA TCAGCTCTTC AAAATACAAT TCCCTTTGAA	2580
TCAATAAAAG AAAGGATACG CCCACATTAT GGAAGCTAAT AAGTATAAAA TTGGCATAAT	2640
TGGTAGCCGT GATATTATTT TACCATTTAG CATGATTGGG TTGATATAT TTCCTGCCTA	2700
CCAAGAACAA GAAGCTATAA ATACACTAAG AAAATTAGCT CAATCTGATT ATGGTGTCAT	2760
TTATATCACT GAAGCATTTG CTTCAATGAT ATTAGATACA ATTCGCCATT ATGATTCCCA	2820
AGTTGTGCCT GCTATTATTT TATTACCGAC TCATAAACAA GGTTTAAATT TAGGATTAAA	2880
ACGTATAGAG GATAATGTAG AGAAAGCAGT AGGACACAAT ATTTTATAAT AATGTACAAA	2940
ATTGTCTGTA ATATTATTCT ATAATTTTGT GACTTAGTAA GGAGAATAAC TTTGACTCAA	3000
GGGAAGATTA TAAAAGTATC GGGACCTCTA GTTATTGCAT CAGGTATGCA GGAGGCTAAT	3060
ATTCAAGATA TTTGCCGTGT AGGTAAGCTA GGGTTAATCG GTGAAATTAT TGAAATGAGA	3120
AGAGATCAGG CATCTATCCA AGTCTATGAA GAAACATCTG GTCTTGGTCC GGGAGAACCT	3180
GTTGTTACAA CTGGAGAACC TCTCTCGGTT GAATTAGGGC CAGGATTGAT TTCTCAAATG	3240
TTTGATGGCA TACAACGCCC ATTAGATCGA TTTAAATTGG CTACTCATAA TGATTTTCTA	3300
GTTCGTGGGG TAGAAGTCC AAGTTTGGAT AGAGATATTA AGTGGCATTT TGATTCCACT	3360
ATAGCAATTG GTCAAAAAGT GAGTACGGGT GATATTCTTG GAACTGTCAA GGAAACCGAG	3420
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TCTGGCGATT TTACAATTGA TGAAGTTGTA TATGAAATAA AAAAATTGGA CGGTAGTTTC	3540
TATAAAGGAA CGCTTATGCA AAAATGGCCT GTCCGCAAGG CGCGTCCTGT TTCTAAACGT	3600
TTAATTCCAG AAGAACCATT AATCACAGGT CAACGAGTTA TTGATGCATT CTTTCCAGTA	3660
ACCAAAGGGG GAGCTGCAGC AGTTCCTGGA CCGTTTGGAG CAGGAAAGAC AGTTGTACAA	3720
CACCAAGTAG CTAAATTTGC CAATGTTGAT ATTGTTATTT ATGTCGGTTG TGGAGAACGT	3780
GGAAATGAAA TGACGGATGT ACTGAATGAG TTTCTGAGT TGATTGACCC TAATACCGGA	3840
CAATCAATTA TGCAACGGAC AGTTCTGATT GCTAATACTT CAAATATGCC TGTGCTGCT	3900
CGTGAGGCTT CAATTTATAC AGGAATTACC ATGGCTGAGT ATTTTCGTGA TATGGGCTAC	3960
TCTGTCGCCA TTATGGCTGA TTCAACTTCA CGTTGGGCAG AAGCGCTACG TGAAATGTCA	4020
GGACGTCTAG AAGAAATGCC TGGTGATGAG GGTATCCTG CTTATCTGGG AAGTCGTATC	4080
GCTGAATATT ATGAAAGAGC AGGACGTTCT CAGGTTCTAG GGCTTCCAGA ACGTGAAGGA	4140

924

ACGATTACTG CTATTGGAGC TGTATCGCCA CCTGGTGGAG ATATTTTCAGA ACCAGTTACT	4200
CAAAACACTT TACGGATTGT GAAAGTTTTT TGGGGGCTTG ATGCTCCGTT GGCACAGCGA	4260
CGTCATTTTC CTGCAATTAA CTGGCTTACA TCTTATTCAC TATATAAAGA CAGTGTGGGC	4320
ACTTATATAG ATGGTAAAGA GAAGACAGAT TGGAATAGTA AAATAACTCG TGCGATGAAC	4380
TACTTACAAC GGGAACTCTAG TTTAGAGGAA ATTGTTCTGC TTGTTGGAAT TGATTCTCTG	4440
TCTGATAATG AACGACTAAC GATGGAAATT GCTAAACAAA TTCGAGAAGA TTATTTGCAA	4500
CAGAACGCTT TTGATTCCGT AGATACATTC ACTTCGTTTG CAAAACAAGA AGCAATGCTA	4560
AGTAATATTC TCACTTTTGC TGATCAGGCA AATCATGCTT TAGAGTTGGG TTCTTACTTT	4620
ACAGAGATTA TGGAAGGTAC CGTGGCAGTT CGAGACCGTA TGGCGAGAAG TAAATATGTT	4680
TCAGAAGATA GATTAGATGA AATCAAAATT ATATCAAATG AGATTACACA TCAAATTCAT	4740
TTGATATTAG AAACAGGAGG TCTATAAATG AGTGTATAA AAGAATACAG AACTGCTAGT	4800
GAAGTTGTTG GGCCTCTTAT GATTGTTGAA CAAGTAAATA ATGTGTCTTA CAATGAGTTA	4860
GTTGAAATTC AACTTCATAA TGGAGAAATT CGTCGTGGAC AAGTTTTAGA GATCCACGAA	4920
GATAAAGCAA TGGTTCAGCT TTTTGAAGGA TCTAGTGAA TAAATTTAGA AAAGTCTAAA	4980
ATTCGTTTTG CTGGTCATGC ATTAGAATTG GCTGTATCTG AGGATATGGT TGGTCGTATT	5040
TTTAATGGGA TGGGAAAACC AATTGATGGT GGACCAGATT TAATTCAGG GAAATATTTA	5100
GATATTGATG GTCAAGCTAT TAATCCTGTA TCTAGAGATT ATCCAGATGA ATTTATTCAG	5160
ACAGGGATCT CCTCTATTGA TCATTTGAAT ACTCTGTAC GTGGTCAAAA ATTACAGTA	5220
TTTTCAGGTT CGGGCTTACC TCATAATGAA TTAGCTGCTC AGATAGCAAG ACAAGCGACT	5280
GTTTTAAATT CTGATGAAAA TTTTGCGGTT GTATTTGCAG CAATGGGTAT TACTTTTGAA	5340
GAAGCTGAGT TTTTATGGA AGAACTCAGA AAAACAGGAG CGATCGATCG TTCGGTTTTA	5400
TTTATGAACT TGGCAAATGA TCCTGCAATT GAGCGTATTG CAACTCCCCG CATTGCTTTA	5460
ACTGCGGCAG AGTATCTAGC TTTTGAAAAA GATATGCACG TTCTAGTTAT CATGACGGAT	5520
ATGACTAACT ATTGTGAAGC GTTACGTGAA GTCTCGGCAG CTCGCCGTGA AGTTCCAGGG	5580
AGACGAGGCT ATCCGGGATA TTTATATACA AATTATCAA CTCTATACGA AAGGGCTGGT	5640
CGCTTAGTTG GTAAAAAAGG TTCGGTGACA CAGATTCCTA TTTTAACAAT GCCAGAAGAT	5700
GACATAACAC ATCCAATTCC TGATTTAACT GGATACATTA CTGAAGGGCA AATTATTTTG	5760
TCGCATGAGT TGTATAATCA AGGTTATCGT CCACCAATCA ATGTTTTACC TTCTCTCTCT	5820
CGATTAAAAG ATAAGGGATC TGGAGAAGGT AAAACTCGTG GAGATCATGC TCCAACTATG	5880
AATCAACTGT TTGCAGCCTA TGCCCAAGGG AAAAAGGTTG AAGAGTTAGC AGTAGTATTA	5940

925

GGAGAATCGG CTTTATCTGA TGTAGATAAA TTGTATGTGA GGTTTACAAA GCGTTTGTAA	6000
GAAGAGTACA TAAACCAAGG ATTTTATAAA AATCGAAATA TAGAAGATAC GTTGAATCTT	6060
GGGTGGGAAT TACTATCAAT TCTTCCTAGA ACAGAGTTAA AACGTATCAA AGATGATTGT	6120
CTTGATAAAT ACTTACCTTT GGTAGAAGTT TAATCCGAA ATGGAGTGAT TATCTATGGT	6180
ACGTTTGAAT GTAAAACCA CTCGTATGGA ATTGAATAAC TTAAAGGAAC GTTTGACAAC	6240
AGCTGAACGT GGACATAAGT TATTAAAGGA TAAAGAGAT GAATTGATGA GGCGATTAT	6300
TTCTTTGATT CGTGAGAATA ATCAACTTCG GAAAGAAGTG GAAAGTTATC TAATTGATAA	6360
TCTAAATCC TTTGCAGTTG CTAAATCATT AAAGAATTCT CAAATGGTGG AGGAATTATT	6420
TTCAATTCCA TCGAAAGAAA TTGAATTATT TGTGAGAAA GAAAATATCA TGAGTGTAAC	6480
AGTTCCTAGA ATGCATATGA ATATTACTTC TCAAAATGAG AACAGTGAAT ACAGCTATTT	6540
ATCTTCTAAT AGTGAAATGG ATGATGTATT TGCTACAATG AATAGTTTAA TTTATAAATT	6600
ACTAAGACTG GCAGAAGTTG AAAAAACGTG TCAGTTAATG GCTGATGAAA TAGAAAAAAC	6660
ACGTAGACGT GTAAATGGTT TAGAATACTC GATTATTCCA AACTTGTCGG AAATATTCA	6720
TTATATAGAA TTGAACTAG AGGAGGCAGA AAGAGCCAAT TTAGTTCGTA TTATGAAAGT	6780
GAAGTAGATC CTTTATTTAG ATTATTAATT AGATGAACAA ATATCAGCTT GGATAAGGCT	6840
TTAAGCCTTT CTAAGCTTTT TTTATTGACA GTATCAGGAT ATCTTTTCA AAATTTTGGT	6900
TTGTTAGATA ATGAAAATGT TTCTACTAAT CTAGATTTAG GATTAGTAAA TCGTAAATGT	6960
AATTATATAG AAAGTAAGCG CGTCATAACA AGGTATCTAT CATTCATGGA GCTCCTCTG	7020
TATACTATTA GTAAAGTAAA ACTATTGGAG GATATTTTAA TGCCACAACC TATTGTTCTT	7080
GTAGAGATTC CACAATCTCG TCGTTTGTAT TCTAAAAAGA GAAATGATAT TCTGCTTAAA	7140
ATTCGTATTG GCAAGCTTGA AGTAAGTTTT TTTCAATCTC TCAATCTCGA AATGGTAGAA	7200
CAGCTTTTGG ATAAGGTGTT GCTCTATGAC AATTCATCTA TCTAGCCTAG GGGAGGTCTA	7260
TCTCGTGTGT GGGAAAACGT ATATGAGACA AGGAATCGAT TCACTGGCTT ATCTGGTTAA	7320
AACCCACTTT GAATTGGATC CTTTCTCCGG TCAAGTCTTT CTCTTTTGTG GTGGACGTAA	7380
AGACCGCTTT AAAGTCCTTT ACTGGGATGG TCAAGGATTT TGGCTACTAT ATAAACGCTT	7440
TGAGAACGGC AGATTGATTT GGCTAAGTAC AGAAAAGGAT GTCAAAGCTC TCACACCAGA	7500
ACAAGTAGAC TGGCTTATGA AGGGCTTTTC TATCACTCCA AAAATATAGT AGATTGAAAC	7560
TAGAATAGTA CACCTCTGCT TCTAAACAT TGTTAGAAAT CGATTTTACT GTCCTGATCG	7620
ATTTGTCTCG TTCTTATTTT ATTTTACTAT AAATCCATCA GAAAGTCGTG ATTTCTATTG	7680

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AAATGAGGAC TTTCTTTTTA TACTCATCTG CTTTCAAAAA GCATTCTAGT CCATCTCCGA	7740
TTAACGATGG ACTTTATCAC CTCCTTCTCC AGTCCTTGTA TAACATCTTG GAGTTGATTC	7800
ATGACATCTT CCAAAGTTTA AAAGGCTTTA TTCTTAAATC CACGTTTACG AATCTCTTTC	7860
CACACTTGTT CAATGGGGTT CATCTCTGGT GTGTATGGAG GAATAAATGC AAAGCCAATA	7920
TTAGTCGGAA TCTTTAAGGT ACTTGATTTA TGCCATATAG CATGTGCCAT AACGAGTAAA	7980
AGATAATCAT CTGGATAAGC TTGTGAAATC TCCTATTCCT AAAGCCCCTT TAGCGCATAA	8040
CTTTGGCTCA GCTTCTATTA TCGCTCACAC CATCCATCAG AAGTTTAATC TGAAGGTACC	8100
CAATTATCGC CAAGAAGAAG ATTGGGCTAG GATGGGTTTA CCAATCACAC GTAAGGAAAT	8160
CTCTAATTGG CATATCAAGG CGAGTCAATA CTATTTGGAG CCCCTTTATA ACCTCTTGCG	8220
AGAGAGACTA TTGACTCAGC CCTTACTTCA TCGCGATGAA ACTTCTTATA GGGTGCTAGA	8280
GAGTGATAGT CAGCTGACTT ACTATTGGAC TTTTGTGTC GGTAAAGCAG AGAAACAAGG	8340
GATTACGCTT TACCACCATG ATCAGTGTCTG AAGTGGTTCA GTAGTACAAG AATTCCTAGG	8400
AGATTATCTT GGCTATGTGC ATTGTGATAT TTTGCGGCAG TAACTTAGGA CTTTAGTCCT	8460
CTAGTTCTGC CTATGCGATA GCAGTCCAAG GTTTAGGAGC AAGGCGACGC TAAGCTTGGT	8520
AAACTTCGAA CCGCTCGTCT GCTTATCGTC AACTGGAAGA AGCTGAACTT GTTGATGTT	8580
GGGCGCATGT GAGAAGGAAG TTTTGTGAAG CGCCCCCCA AGCAAGCGGA TAAATCATCC	8640
TTAGGAGCTA AAGGTTTAGC TTATGTGAT CAGTTATTTT CCTTGGAAAG AGACTGGGAG	8700
GCTTTGCCAG CTGATGAACG ACTACAGAAA CGTCAAGAAC ATCTCCAGCC CTTAATGGAA	8760
GACTTCTTTG CTTAGTGCCG GCGTCAGTCA GTTTTAGCAG GTTCAAACT AGGAAGGGCA	8820
ATTGAATACA GCCTCAAGTA TGAAGAAACC TTTAAGACCA TTTTGAAAGA CGGACATCTG	8880
GTCTTTTCCA ATAATCTAGC TGAACGCGCC ATTAAATCAT TGGTTATGGG ACGGAGTAAA	8940
AGAGTCCAGT GGA CTCTTTT AGCCTAAGCT CAGTTTAAAA AAGCGAGGGT GGTATTTTTC	9000
TCAAAGTTT GAAGGAGCTA AAGCAAGAGC TATTATTATG AGTTTGTGG AAACAGCTAA	9060
ACGTCATCAA TTAAATAGCG AGAAATATCT ATCCTATCTT CTAGAATGTC TTCCAAACGA	9120
GGAACTCTC GTAAACAAAG AGGTTT TAGA GGCTTATTTA CCATGGACTA AAGTTGTACA	9180
AGAAAAGTGC AAATAAGAAA TCTCCAGATT AGGAACATC CGTGAGTTCT CCAGTCTGGA	9240
GATTTTTCAT TAGACTTCCT GCGAAACAAA ATATGGTATA ATAGTTCTAT GAATGATGAA	9300
GCAAGTAAAC AACTAACCGA TGCACGATT AAGCGTCTG TTGGTGTCA ACGCACGACT	9360
TTTGAAGAGA TGTTAGCTGT ATTAAAAACA GCTTATCAAC TTAAACACGC AAAAGGTGGA	9420
CGAAAACCTA AATTAAGTCT AGAAGACCTT CTTATGGCCA CTCTTCAATA TGTGCGAGAA	9480

927

TATCGAACTT ATGAACAAAT TCGGCTGTT TTTGGTATTC ACGAAAGCAA CTTAATCCGT	9540
CGGAGCCAAT GGGTTGAAGT AACTCTTGTT CAAAGTGGTG TTACGATTTC AAGAACTCCT	9600
CTCAGTTCTG AGGACACGGT AATGATTGAT GCGACGGAAG TAAAAATCAA TCGCCCTAAA	9660
AAAAGAATTA GCGAATTATT CTGGTAAAAA GAAATTTTAC GCTATGAAGG CTCAAGCGAT	9720
TGTCACAAGT CAAGGGAGAA TTGTTTCTTT GGATATCACT GTGAACTATT GTCATGATAT	9780
GAAGTTGTTC AAAATGAGTC GCAGAAATAT CAGACAAGCT GGTAAAATCT TGGCTGACAG	9840
TGGTTATCAA GGGCTCATGA AGATATATCC TCAAGCACAA ACTTCACGTA AATCCAGCAA	9900
ACTCAAACCG CTAACAATTG AAGATAAAGT CTATAACCAT GCGCTATCTA AGGAGAGAAG	9960
CAAGGTTGAG AACATCTTGG CCAAAGTAAA AACGTTTAAA ATGATTTCAA CAACCTATCG	10020
AAATCATCTA AACGCTTCGG ATTACGAATG AATTGTGATTG CTGGTATTAT CAATCATGAA	10080
CTAGGATTCT AGTTTTGCAG GAAGTCTATT ATCAAAAATA CCATCAAGAT TATATAAGAT	10140
TGATACAGGA AAAGTTTAT TTGATGGTGT AAATATTAAT CAAATAGATA AAAAAATATT	10200
AAGTCAAAAT TTAGGAGTAG TTCCACAGGA TTCATTTTTA TTGAACCGAA GTATTCTTGA	10260
TAATATAACT TTAAAGCACG AAGTTACTTC ACAAAGATA GAGGAAGTTT GTAAAGCAGT	10320
TCAAATCTAT GATGAAATCA TGGCTATGCC GATGAAATTT AATACTATCA TCTCAGAGAT	10380
GGGGTCAAAT ATTTCAGGTG GGCAAAGGCA ACGGATAGCA CTGGCACGTG CATTAATAAA	10440
TAATCCTAGT ATTGTAATTT TAGATGAAGC AACTAGTGCA TTAGACACTA TTAATGAGGA	10500
AAGAATAACA AAGTATATAC AAAGTCAGGG CTGTACTCAA ATAATTGTAG CTCATAGATT	10560
GTCAACGATT AAGGATGCGG ATGTTATTTT TGTAATGAAA GGTGGTAAGA TTGTTGAGTC	10620
AGGAAATCAT AAGTACTTAA TGGATCTTGG TGGAGAGTAC TACAGCTTAT ATACAAAAG	10680
GAAATGAGGT GTAAAGAAAA TGAAGAAAGA AAATGAATAT GTAATTTTAA CAACAGCCTC	10740
ACTAGGGGTG ATGATTGGAA TAGTGTTTGC AATTTTTTTA GATTTTCCAG TTGAATATGG	10800
TATTTCTTTA GGCTTGTTGA ATGGAATAGT ATTGGGTTTC CTGATTGTTT AAAAAACAA	10860
TAAGAATTAA GCATAATTTT TTGCTGTAAA CTAAGGAGTA GAGATGGCTA TAGTTGAAAT	10920
TATAAATCTA AAAAAAGCT TTAAAGATAT TGAAGTTATT CATAACACTT AAATAATAGA	10980
GCAACTACAG TAGTAGCTTA AAAACATGAT TAAATCGCTA TTCTTAGGAG TAGCGGTTTT	11040
TCTTTTGTG TAATACTCTT TGAAAATCTC TTCAAACCAC GTCAGCTTTG CTTTACCCTA	11100
CTCAAGTACA GCCTGCGGCT CGCTTCCTAG TTTGCTCTTT GATTTTCATT GAGTATAAAA	11160
AGGGTCAAGT AAGTATAGTA AATTGAAATA AGATATGAAC AAATCGATTA GAAAAGTCAA	11220

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ATTAATTTCT AGAAATATGT TAGAAATTGG TTTGAATTCC GCAATCAATT TGTTCAGTTT	11280
TTATTTTCATT TCATTTTATT TAATTAGATT TTCCAATTTT TTAATTCAAG CTAAAAATCC	11340
CCAATCGTAG TGATTGAGGA TTGAGTAAAT AAATCTTAAA CAATACCTTG TGCAATCATG	11400
GCATTTGCTA CATTTTCAAA GGCAGCAATG TTAGCTCCTG CAAGGTAGTC TTTATCAAGA	11460
CCGTATGTTT CTGAAGTCGT TTTAGCTGTG TTGAAGATGT TTGTCATGAT GTCTTTGAGA	11520
CGGCCATCAA CTTCTTCACG AGTCCATGAG AGGCGAAGAC TGTTTTGGCT CATTTCAAGA	11580
GCTGAAACGG CTACACCACC AGCGTTGGCA GCTTTTGCGAG GTCCGTAGAA GATACCATTT	11640
TCTTTGTAAA CTTTGATGGC ATCAAGGTCG CTCGGCATGT TGGCACCTTC AGATACACAG	11700
ATAACGCCCTT GAGCAACCAA ACGTTTAGCT GCTTCACCGT TGATTTCTGT TTGAGTGGCA	11760
CATGGAAGAG CAATGTCATA GTTTCAGCG TAAGTCCATA CAGTACCTTC GTGGTAGGTT	11820
GCAGTTGCTT TTTCAGCTGC ATACTCAGTC AAACGAGCAC GACGTTTTTC TTTAACATCA	11880
ACCAAAAGAT CGAAGTCGAT ACCATTTTCA TCGATGACAT AACCATTGTA GTCAGAAACA	11940
GAAATAACAG TTGCACCGAG TTCAGTTGCT TTTTGAAGAG CATATTGAGC AACGTTACCA	12000
GAACCTGAAA TAACGACTTT CTTACCAGCA AAGCTGTTAC CGTTAGCTTT GAGCATTTCT	12060
TCAGTATAGT AAACCAAACC GTAACCAGTT GCTTCTGGAC GAATCAAGCT ACCACCAAAT	12120
CCAAGAGGTT TACCAGTCAA GACACCAGCA TCAAATTGGT TAAGACGTTT GTATTGACCG	12180
TAAAGGTAAC CAATTTACAG TCCACCAACA CCGATATCAC CAGCAGGTAC GTCAAGTGAT	12240
GGTCCGATGT GTTTTGTCAA TTCAGTCATG AAGCTTTGGC AGAAGCGCAT CACTTCAGCA	12300
TCTGTTTTAC CTTTAGGATC GAAGTCTGAT CCACCTTTAC CTCCACCGAT AGGAAGTCCA	12360
GTCAAGACAT TTTTAAAGAT TTGTTCAAAT CCGAGGAATT TCAAGATCCC TTGGTTTACA	12420
GTGGGTGGA AACGAAGTCC ACCTTTGTAT GGTCCAACAG CTGAGTTGAA TTGAACACGG	12480
TAACCACGGT TTAATTGAAT TTTTCCATCA CGGTCAACCC AAGGAACACG GAAAGAAACC	12540
ACGCGCTCAG GCTCAGTAAT ACGTGCCAAG ATATTTTCTT CGATATACTC AGGGTGTTTT	12600
TCAAATACAG GTTCTAAAGT GTTGAAAAAT TCTTCAACAG CTTGGAGGAA TTCAGCCTCG	12660
TGCCGG	12666

(2) INFORMATION FOR SEQ ID NO: 138:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3083 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 138:

AGCAACTGTT GTGAACCAAT TCCGATAAAT TCCAAGAATT GGTAAATAGA GCCATTTTGA	60
CCAAAAATCC CGATAAAAGC ATAGGCTTTA AGGAGCAAAT TGATCCAGGT AGGAAGGATA	120
ATCAGCATGA GCCAGAGTTG ACGGTGTTTG AGACGGGTCA AAAAGAGGGC CGTCGGATAA	180
CTGATAAGCA GTGCCACAAA GGTCACAATG CCTGCATAAA GCACTGAGTT GAAACTCATT	240
TTAAGATAGG TCAAGTTTGG TGACGCAAAG TAAGATTTGT AATTTTCTAA ACTGAACTGG	300
CCTTCGATGT TGAAAAAGGA TTGACCGAAA ATCAAGACCA AGGGTGCCAA TACAAAGAGC	360
GCAATCCAAA GCATGTAGGG TACTACAAAG AGTTTAGAGC TTGTTTTCTT CATCTCTTTC	420
CTCCTCGATT GCATTGATCA AACCTGCTTC TTGCTCTTCG ATTTCTACGT ACTCCTCAAT	480
ACGAGCATCG AACTCTTCTT CGGTTTCATT GAGACGCATG ATGTGGATGT CTTCTGGTTC	540
AAAGTCCAGA CCGATTTCCT CACCCACGAT AGCCTTACGG GTTGAGTGGA TCATCCATTC	600
ATTTCCAAGT TCGTCATAGG CGATAATTTC ATAATGAACT CCACGGAAAA GCTGGGTATC	660
GACCTTAACT TGGAGCTTGC CTTCTTCAGG AAGGGTAATG CGCAAGTCCT CTGGACGAAT	720
AACGACCTCA ACAGGTTTCT TTGGCTTCAT CCCACCATCA ACCGCTTCAA AGCGTTTGCC	780
GTAAATTCG ACCAAGTAGT CCTCAATCAT GGTACCTGGC AAGATGTTTG ACTCCCCGAT	840
AAAGGTGGCA ACAAAGTGGT TGATTGGCTC ATCGTAGATG TCCACAGGGG TTCCAGACTG	900
GACAATCTCG CCATCATTC AACGAAAAT CCAGTCACTC ATGGCAAGAG CTTCTTCTCG	960
ATCGTGAGTG ACAAAGACAA AGGTAATGCC CAATCGTTGT TGTAATTAC GCAATTCGTA	1020
CTGCATGTCT GTTCTCAATT TCAAGTCCAG CGCTGATAAA GGCTCGTCCA ACAAGACCAC	1080
ACGGGGTTGG TTGATGATAG CACGGGCGAT GGCCACACGC TGACGTTGTC CTCCAGAAAG	1140
TTTGCGGATG GAACGTTTTT CATAACCTTC CAACTGAACC ATCTTGAGAA CTTCCGCTAC	1200
ACGCTGCTCG ATTTCTTTCT TATCAATTTT ACGCAAGCGA AGTGGAAGG CAACATTTTC	1260
AAACACATTC ATATGTGGGA ACAAGGCATA GGATTGGAAG ACGGTATGTA CGTCGCGCTT	1320
GTGCGTTGGA ATATCATTGA TACGAACACC GTCTAGCATG ATATCTCCTG TCGTCGCATC	1380
CAGTAAACCT GCAATAATGT TTAGGATAGT TGATTTCCCC GAACCAGATG CACCTAGAAG	1440
GGTGTTAGAA TTCCCTTCTT CCAACTCAAA GTTGATGTCT TTGAGAACCT TGGTGTGCT	1500
GTCTTCAAAA ACTTTAGAGA CGTTTTTGAA TTCGATAATT GGCTTTTTC AATTGGCATAA	1560
ATTCTTCTT TTTCATAGAT TAACCGATCG GGGCTCTGTC AGGTCCCCAC TACCTCTTGC	1620
AGGGAGTAAA ACCACCTGCA TACATCTTCG CTACCGATAG GCTTTCACCC AAGATCCGGA	1680

930

CTTCTCTTTC AAGCGTAATA CCTGAGTGTT CCTTGACTTT TTCGATAACC GATTGGATCA	1740
AGTCCTCGTA GTCTTTGGCC GTTCCATCTG CGACATTGAT CATAAATCCT GCATGCTTTT	1800
CTGACACTTC TACGCCACCG ATACGATAGC CTTTCAAGCC AGCTTCTGAA ATTAAGTAC	1860
CTGCAAAATG CCCGACTGGA CGCTTAAAGA CCGAGCCACA AGATGGGTAT TCCAAAGGTT	1920
GCTTGAGTTC ACGTAGGTGC GTCAAGCGGT CCATTTCTCTG CTTGATAACC TGATGGGTTC	1980
CTGGAGCTAG GGCAAATTTA ACTGACAAGA CAACTGCACC AGACTCCTGA ATAGCTGAAT	2040
GACGGTAACC AAAAGCCAAG TCTTTAGCAG ACAGGGTTTC GATTTCTCCA TCCTTGGTCA	2100
AGACCTTACA AGACTGCAAG ATGTGAGCAA TCTCGCCACC ATAGGCACCC GCATTCATAA	2160
AGACAGCACC GCCAACGCTT CCTGGAATAC CACAAGCAAA CTCAAAGCCA GTTAAACTAT	2220
GACGGAGGGC AATGCGAGTT GTTTCAATCA AGTTAGCCCC AGCTTCTGCT TCAATGGTAT	2280
AGCCATCAAC AGAAACGTTA TTGAGCTTGT CACACAAGAT GACAAATCCA CGAATCCCAC	2340
CATCACGAAC GATGATATTG CTTGCATTGC CAAGAACCAT CCAAGGGATA TTTTCTGGT	2400
TGGCAAATTT CACAACGCGA GCCAACTCAA AACGATTTTCG TGGAAAGACC AAATAATCAG	2460
CCTCTCCACC TACTTTTGTA TAACTATAGC TATGCAAGGG TTCCTTAAAA CGGATATCAA	2520
TTCTTCTTAA GATTTCAGC ATTTTCTCTC TTACAGACAT GTCACTCTTC CTTTACAAA	2580
ATTCATTCCA TTATACCATT TTTAGAGACA TTTGACGACC ATAAAAATAC CTTGTTTGGG	2640
TTTTGCATAA GAAAAAGAGG TTCCCCCTT TTTATGATTT TTTACAAAAG ATTTCTTGG	2700
TTCCATAGGC GACCAGAAG AGCTCCAGTG CTAGAATCAC TTCAACCAAG ACTGGATTG	2760
TCAACCAGCC TACTTGGAAG AGAGATGGTG CCAGATCAAA GAAGGCATGC AAGCCATAGG	2820
CTGCTAGGAG ATAAATCCAT TTCTTCTGGC GAACAGCTTG GTAAACCCAA ACTGTCAAAA	2880
GTAATTGGAA ACCAAGCGCC AAGATTCGCT CAAAACCAAG CAAATAAATC TGCCAGACCG	2940
AAAGTGACTG AATGGTTTTT AACATATTTT CAGACAGTAA TTGCATAACC TGTGGATTC	3000
GAGTTTGAAC TGCCGAAAGA ACAATGTAAA GATTGAGTAA ACTAGTAAGG CCTAGAAAAA	3060
TCAACTCCAA GCCACCATGC CCC	3083

(2) INFORMATION FOR SEQ ID NO: 139:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 15363 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 139:

931

CCGGAGGATA TTGACCACCA CAAAAGCAG GGGGAAAATC GAAATCAACC AATAGTAGGC	60
TACTGCGACA CTGGTCAACT CACTATCTGA TGCTTGATAA TAATGCAAAA AAGCTTTTAA	120
TAAAGGTTTG TCTATCAGCT CTTTCCACCA CTTTTTCATG TCATACTCCT TCACTTATAA	180
TCTTATACTC AATGAAAATC AAAGAGCAAA CTAGAAAGCT AGCCGCAAGC TGCTCAAAAC	240
ACTGTTTTGA GGTGTAGAT AAGACTGACG AAGTCGATCA CATACATACG GTAAGGCGAC	300
GCTGACGTGG TTTGAAGAGA TTTTCGAAGA GTATTAAC TAATTCTTCTT ACCAATCCA	360
CCATATCATA CGGTAGGGTA TTGGCAGCTT CCTTCAAGGA ATAGTTCTCT AAGTTATTTA	420
CATTTTGTCTG TAATTCTTGT GCATACTTAG TCGTAATCAA TCGTTTTTCT TCGTATTCGA	480
AAATCAACTT GCGCTCCAGA TAATAGCCTC TCAGCATTTC ATCGATATTG TTGGGTTTGA	540
CACGATTGAT AACCCGTTTCG ACAAAGGCAC CACTGCTGAT AATAGCTGTT TCTCGAAGAC	600
GAGACTCCTG CATAAACTA ATCAAAGAGC GTCTGTAGAC TCCCTTCAGG TTTTCCAAAC	660
TTTCAATAAT CATCTCTGTA TTGGCAAGAT AGAGCTCTGC AATTGGGTCA TAATCAAGAG	720
CACGGAGACG GCTTTGCTCC TTGTTCTTCC AGCTACGGAA GGTCTTTCCG AGAGTAAAAA	780
CTTCATGAAG GAGAAAACGT AAAATCCTCA AGGAAACAAG AAAATAATAG GTCAGTCTTG	840
AGGCAAGTTT ACGATTGATT CCTTGTCTTA TATTTTTCAG ATAACGTTGG TAAACTCGGT	900
AAGCAGGATT GCTAATGTTT CCCTCTTCAT AGGCTGTGTC CAAACCATCA CTTTCAATAC	960
TAAGAATCAA GAGTTTCAAA GCAGCCCAGT CTTCTTGATC ATCCTGGTTT TCTTGGCTTA	1020
AAATGAGATT TTCAATACGT CCATGATAAT TGTCAATAGC CGCATAGAGG GGAAGTTTAT	1080
TTCTGGTGTC TTCCAACCTT TTTTCCAACCT CTAGCGTTAC TTCATTCAAA ATGGCGATAT	1140
GCATAAGATA ATCCTTGCTT TCTTCTCTT CATCAGAAAG ATGAGGCAAG ACCAAGAGAC	1200
CTGTTAAAAA GCTAACAAGC GTCACACCTG CAACAAGGAA AAGCAAAAGA GGATACTCCT	1260
GTTCTAGATT ACTTGGTATC AAGAGAATCG TAGCAATCGA CACCGTTCCC TTAACACCTG	1320
AAAAGGTCAA GAGAAACATG TCCTTCATAT ACTTATTTAG CTTTTTCTTG AGGCGTCGGG	1380
TTCTATAGGC ATAATAGCCA TAGATCATAA TAAAACGAAT GACAAAAAGG ACAAAGGTAA	1440
GGGCGATAAG AGATAGCAAT AAAAGTAGAG GATTATAGAT TGGATTGGTC AAGATAGGTT	1500
CTGCTATCAT TTCCAACCTC ATCCCTAAAA TCACAAAGAC AGAACCGTTG AGCATAAAGG	1560
TCACTGTATG CCAGACCGTC TCGGTACCGG TATCCACTTG GGCTTCGAGG AGCGTGATTT	1620
TCTTGAAGCG ACTTGCCTTT AAAATTCCAG CAACTACGAC GGCAATAATA CCTGAAACAT	1680
GAACTTCTTC TGCCAGAAAG AAGGTCACTA GAGGCAAACT CAATTCTAAT AAAAGTTCAC	1740

932					
TGGCAATATC	CGTTGCGCGC	ACACTTAGCA	AGAAGGTATG	GAGGAAGCGG	TTGGTCATGG 1800
CTGTTAAAA	TCCAATTAAA	AAACCGCCTA	GGATTGAAAA	GATGAGCGAA	CTGCTAGCTT 1860
GCCCCAGAGA	AAAAGCTCCA	GTGTGTCCAAG	CTGTCAAAGC	TACCTGAAAA	GCCACCAAAC 1920
CAGAAGCATC	ATTCAAGAGT	CCTTCGCCCT	TAAGAATATT	GGACACGCGC	TTAGGAAAGC 1980
TAAACGCTC	CGAAAGAGAG	GCAAAGGCCA	CCAAGTCCGT	AGGACCAAGG	GCTGCCCCAA 2040
CAGCCAAGCA	AGCTGCCAAG	GGAAGGCTGA	ACCAAAGAAG	ATGGGCCAAG	CCACCCAAAC 2100
TCAGGGTCGA	GATAAAAATC	ACTGGAATA	TGAGATAAAC	AATGATTTCG	CAGTGTTTTA 2160
AAATAGCCGT	AACATCTGCT	TCTTCAGCCT	CTCGGAAAAG	CAAGGGTCCG	ATAACCACTG 2220
CCAAAAACAA	CTCCGTATTA	AGGTGAAAGT	CAGTATTGGG	TAAAAAGAGA	CCAATCACAA 2280
TTCCCAAAAG	AATTTGCACC	AAAGGGAGAG	GCAAAAAGGG	CAGGAGCTTA	TTGGTTGTAC 2340
TTGAGACAAT	CAAAACCACT	AAAAATAGGA	TGAGGTAAAT	CAGTAATTCC	ACGCACGTCC 2400
TCCTTAATCT	TTTTTACAAC	AGGATTCAAA	TATCTCCTTC	TGCTCTTTGA	TTTTTTGGTC 2460
AATCTTGGA	CAGTCTTTGT	GCTCAATTTT	TCTCTGGCAC	CGTTCATTTT	CAAGAGCAAC 2520
TAATTTTTTC	TTGATTTTAA	GCATTTTTTT	GCTCATATGC	GCTTGGTCTA	GCACGCCCAT 2580
CGCTCGTTTC	TGGTGGGTTG	ATTCAACAAA	ATTCTGGCGC	ATGGCATCCA	GCTTTTCGTG 2640
TAAGTATTGT	TTATCCATGT	CTGTATCTCT	CTAATTTTTT	AATCATCACT	AAAAACGGCG 2700
GGTGTGTGAC	TTGGTTTAAA	GTTCGGTAAA	TGGCAGCTGT	GTACTCTTGT	TGGTTCAACT 2760
GGATCACAAA	ATCCAAGACA	GCATCTCTCT	CGAGATCGCC	TCCTTCATGA	CCATAGTAAA 2820
TCATAATAGC	AATTCGTCCA	CCTTTGACAA	GTAAGCCACA	TAGCTTTTCT	AATGCCTCAA 2880
TCGTTGTCTG	CGGTCGGGTG	ATGACAGACT	TATCAGCTGC	CGGCAAATAG	CCCAGATTAA 2940
AAATCCCTGC	CTTAGCTTTT	ATCACAAACT	GGTCCAGTGT	CTCATGGCCT	TGCAAGATTA 3000
ACTGGGCATT	TGTCAAGTCA	GCCTGATGCA	AACGCTCTTG	GGTCTTTTCC	AAGGCTTGCT 3060
TCTGAATATC	AAAGGCATAG	ACTTGCTTGG	CTAGCTTGGC	TAAAAAAAGC	GTGTCATGAC 3120
CATTTCCCAT	AGTCGCATCC	ACTACGACAT	CCTCTTTTGT	CACGACCTCA	GCCAAAAAAT 3180
CATGTGCCAT	CTCAAGTGGT	CTTTTCATTT	TCAAACCTCCT	GTTTACAGC	CTTGCATCCT 3240
TGAACACTTC	CACGACGTCG	CATCTCCATC	TCAATGCTGT	TGAGGACTTC	CCATTTATTG 3300
AGGCTCCACA	TAGGACCAAG	CAGCATATCC	CTAGGCGCAT	CTCCTGTAAT	TCGATGGATG 3360
ACGATATGTT	TGGGAATAAT	TTCCAGTTGG	TCACAGATGA	CCCTGACATA	TTCGTCCTGA 3420
CTCATCAATT	GTAAACGCCC	CTCATGGTAA	TCTCGTTGCA	TACGAGTATT	TGTCATAAGA 3480
TGGAGCAAAT	GCAGTTTAAT	CCCTTGAATA	TCGTTATCCG	TGACACAACG	GCGGACATTT 3540

933

TCAACCATCA TCTCATGGGT TTCACCAGGC AAACCATTGA TCAAATGGGA AACAACTCTCA	3600
ATTTTGGAT ACTTTCTCAA ACGCTTGACC GTTCCACCT ACAATTCATA AGAATGCGCA	3660
CGGTAAATCA GGTGAGAGGT TGCTTCATAA GTAGTTTGCA AGCCCAATTC AACCGTCACA	3720
TGCATGCACT CCGATAACTC AGCCAAATAT TCGATGGTTT CGTCTGGTAA ACAGTCTGGG	3780
CGCGTTCCAA TATTGATTCC TACCACACCT GGCTCATTGA TAGCCTGTTC ATAACGCTCT	3840
CGAATAACTT CCACCTTTTC ATGGGTGTTG GTAAAATTTT GAAAATAAAC CAGATACTTC	3900
CGAACATCCG GCCACTTGCG GTGCATAAAG TCAATTTTCCT TATAAAATTG CTCACGGATA	3960
GGCGCATCCG GTGCCACAAT GGCATCTCCA GAACCAGAAA CCGTACAAAA AGTACAGCCC	4020
CCATGAGCCA CAGTCCCATC ACGATTGGGA CAATCAAATC CCGCATCAAT AGGGACTTTA	4080
AAAGTCTTTT CTCCAAAGAG TTTTCGATAA TAATCATTCA AGGTATTATA AGATTTCATG	4140
ACTTTCATTA TAACAAAAAT CCCCCACAAT CTCAAAAGCC TGACTTTCCT ATAAATTCCT	4200
CTGTTTCTCG TTTCCATTAG CCTTTTTTTA TGATACAATA TGGGTATGAT TTTAATGAAA	4260
TTAGCATCTA TTTTATTATT GATACTGACC TTAGTCGTCT GCATTATCCT AACCAACTT	4320
TTTAGATTAA AAAAAGTAGG ACGAACTTT GCGGATTGCG CTTTCCAGT CTTGGTATTT	4380
GAGTATTACT TGATTACAGC TAAAACCTTT ACCCATAATT TCCTCCCTAG ACTGGGGCTA	4440
GCCCTCTCGA TCCTAGCCAT TATCTCTGTC TTTTCTTCC TTTTGAAAA ACGCAGCTTT	4500
TACTACCTTA AATTATCAA ATTCTTCTGG CGTGCAGGAT TCTTATTAAC CCTTATCATG	4560
TATATAGAAA TGATTGTTGA ATTGTTCTTA ATGAAATAGT CGAATCCCTA AGCATTTCCT	4620
AGGGATTTTT GCTTCTCTA CAAAATAGTA TAGACAATAA CACTATACAA TTTTATACAA	4680
AGAAAAGAGT CTGGGACAAT AGTCTCTTAT ATCCAAAAAG GCAACGGATT TGCCGTTGCT	4740
TTTTTGATG GTTACGATAG TCTTGGTAAA ATAGAATTGC CCAATAAACC ATTTAGAAAG	4800
GCTATCCCAT GCATATTCAC TATAACACAA ATCAAACAAC TTTACCACTA GAAATCAGTT	4860
CCTTCTTACC ACAAGATCAT CTCGTTTTTA CTATTGAAAA AGTGGTGAAT ACCTTGAGG	4920
AACGTCACTT CTACACCTCC TATCATGCCT TTGATCGCCC GTCTTATCAC CCTAAAATGC	4980
TTGTATCTAC TCTTCTATTT GCCTATTCAC AAGGGATTTT CTCTGGTCGA AAAATTGAAA	5040
AATGGAAGAG TTAGTGACCT TAGATTGTTT GTTTATTGAC AGAACTAAGA TTGAAGCCAA	5100
TGCCAACAAG TATAGTTTTG TGTGAAGAA AACGACAGAG AAATTCTCCG CCAAACCTCA	5160
AGAACAGATA CAGGTCTATT TTCAAGAAGA AATCACTCCC CTTCTGATTA AATATGCCAT	5220
GTTTGATAAG AAACAAAAGA GAGGTATATA AGAGTCAGCT AAAAAGTTAG CGAATTGGCA	5280

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CTATAATGAC AAGGAGGATA GCTACACACA TCCTGATGGC TGGTATTATC GTTTTCACCA	5340
TACCAAATAT CAGAAAACAC AGACAGACTT TCAACAAGAA ATCAAGGTTT ACTACGCCGA	5400
CGAACCTGAA TCAGCCCCCTC AAAAGGGACT GTATATGAAC GAACGCTATC AAAACTTGAA	5460
AGCTAAAGAA TGTCAGGCGC TTTTATCTCC CCAAGGTAGA CAGATT'TTCG CTCAACGCAA	5520
GATTGATGTG GAACCTGTCT TTGGGCAGAT AAAGGCTTCT TTGGGTTACA AGAGATGTAA	5580
TCTGAGAGGG AAGCGTCAAG TGAGAATTGA CATGGGATTG GTACTTATGG CCAATAACCT	5640
CCTAAAATAT AGTAAAATGA AATAAGAACA GGACAAATCG ATAAGGACAA TCAAATCGAT	5700
TTCTAACAAT GTTTTAGAAG TAAAAGTGTA CTATTCTAGT TTCAATCTAC TATACAATAA	5760
GAGAATGACT CAAAATTAAA AAGCTAGAGT TCCACAATTG GAAATATCTA GCTTTTTTGT	5820
GGTTGAGAAC TATTTTGTCT CAGGCTCTTT ATCTTCTATT TAGGACAAGA GTTTTCTTTT	5880
GGTCTTTAAT GATAAAGAAG GTATCAAAAT TTCTAGTCTT CTTTTTTACC TTTAGTAACT	5940
ACTAATCTG CACTCAAACC TAGAAGAGTT AAACCTGCTG CTACTGCTGC TTGGCTTGCC	6000
GCACTACCTG TACTTGGTAA CTGGGCTTTA TTAGTTTGAC TAGCTTCACT TGAATCAATT	6060
GGTTTTGTAT CTGCTTTTTC TGACACTTGT GGTTTTTTAG CTCTTGAGC TACTGGTTTG	6120
GTTCCAACCA AGACGATGCG GTCTGTCGGA ACTTCTACCA CTTCACGGAG TTTTCTTCC	6180
TTACTTCCAT CAGGATTAAT CGCTGTAAAG ATACGTTCTT TTCCAAC'TT TCCTTCTTGT	6240
TCTACACGAG TTTCACCTAG ATACAGTGTT GAATCTTTT TCTCAACTGT CTGTATGCC	6300
AAATCTTTT CAACAAATC GATTTTGGGA AGATCTTCTT GTACAGCAGC AACTGTCTTC	6360
TCAGAACTG GTTTTTCCTT AGTCAAGTGG ATACGGTATT CCTTGACTTG TTTTCCACTT	6420
TCTGAAACGA GCGGAACAAG TACTGGAAAG CTATCTTCTC CACTATCTAC CACAGTTGAA	6480
GCTACTTGAT TGTTTTCTTC AACTGAGACT TTTGGCCGTT GACCTTTATA GGTAATTGA	6540
TAGTCTTGAC GATTTTCAGC GAAATCAGCA AGTTCTTTTC CATCTACAAG AATCTTTGAT	6600
TGAGTGCTTT CTGAGGCAA TTCACTTGGT GCAAGGAAGG TCATCTCAAT CATCGCAACA	6660
CCGCTCTTAT CTGCTTTACG CTCCATACGC CATCTCATAG CTTTGGCTTT GATAGCTTTA	6720
AATGTTACGT TGATTTCATC ACCAGCTGCA ATGTCTTTAT CCGCACGATA AGGAACAGCT	6780
TCCCAATTTT CTGGATTGTT GAATGGATGG TCTGCGTCGT AGGCTTGGTA GTTTGAATAG	6840
TAGGTTGGCA CTTCAAATC TGGACCGACA TAGCGTCTA AAACGAGTTT AGATGGTGCA	6900
TCCGTACCAC TATCTGCAAA GAACTGAACT TTTCTTGTG TAACAGTCCG TTCTACAATC	6960
TTACCATTTT CACGGAAAAT CACACCGCT GATACTCTG GATTAGAAGA TGGTGTGGT	7020
GACCAGTTTG TCCAACGACG ATTTTCTGAA TGATCTCCGT CATTGAGATA GTCAACGCGG	7080

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TCATGAGAGT TTTTGTCAAT ATCATTGGTT GCTGAAGCAA AGGCCTGGTT ACTGTTTTCA	7140
TCATAGTTAG GGTATCTGA AAGAGTCTCA CCAAGTTTGT CTGTCACTCG TACAGTGATC	7200
TCAGCAACAA GGTTACTACC AAGGACACGG CCTCGAACAG TAAATTGACC TGCTTTTGTC	7260
AGATTTTCCG CTGGAACCTC TTCCCATTCA ACTGTCAGGT CTTTGTGTTT GTAGCCGTCT	7320
TTACCTGTGA AGTAAACTGG AACCTTAGTC GGCAATTCAA GTGCTTGACC TACTTGTAGC	7380
AAGCGAGCTT GTTAAACCGC AGCAACTGGT TTATGAGAAA GTAAGCTCTT ATCCTTAGTG	7440
AAGTGCAGAC GGTATTCTCC TAAGATGTCG CCATTTTCAG CTTTCGCGAT GACACGAACT	7500
GGCTCACCTT CACGAACGCT TGGAAACGAG GTAGCGAGAC CATTGTTGCT AACACTTGCT	7560
GTGACTGCCG GAACTTTTCC ATCTACAGAC TCAAGGTAGT AGTCTGTCAA ATCAGGGTTG	7620
AAGTTTGCTA AGTCTTTGCC GTCAACTTGG ATTCTTGTTT GTCCTTGCTT GGCTGCCGCA	7680
ACTTGTTTCG CAAAGATTG TACCTCTGTG ATAGACGTTT CACGCTTGTT ATCTGCTTTA	7740
ACCATGCGAA TACGAACAGC ATAGGTTTCA ACTTTATCAA AGCTAAAGTG GTTCATTTCT	7800
CCAGCCTTGA GTTGAGCAGG GGCTTTTAGA TTAGTAACTG GTTTCAGTT GGCAGAATCA	7860
TTAAAGACAT GGTCTCAT TACCAACAAA CTAGGGTTTT TAGGAGCTGT TGGGACAGTC	7920
TTACCAACAT AATACTCAAT CACATAAGAC TTCGGTACAC CAACTCCATG GTCTTCATGG	7980
AATCCGACAC TTAGATTATC AACGGAGCGT TTGCTCAAGA TACCTGAATC TCCAAACAGA	8040
ACACCGACTG AAGCTTCTGG ATTAGTACGA TTCCAGTTTG TCCAACGATT GGCTGGTTGG	8100
TTATTGTAGG AAATGAGCTT GTCATTAAACA TTTGAAACTG GGTCGCTTGG ATTTGAGTCT	8160
GAAGCAAAGG CAACTGGCAA TTCTGAACCG GTCCATTGGT CAGAAATGTT TGCACCTTGC	8220
TCAGTTTGAG CAGATACGCG AACATGAAGT TTAGTTGTTA ATTGCGTACC TTCTAAGCGA	8280
CCATTAACTG TAAAGACACC TTCCTTAGCG TATTGCTCTG GACGAATCGC ATCCCATGCA	8340
ACCTTAGCTG ATGAAACGTG ACCATTTGAA TCATATGTCC GAACACTTTC TGGTAATTGT	8400
GGTGCTTCTG CGATTGGAGT TGTCACTG ACTTCTTCAA CTGAAACGAT ACCTTCTACA	8460
GAGACTTTTG CACGCGCTTC AAGGTCAATT CCTTCAACTT TACCTAGTAC TTCAAATGTT	8520
TGATAGGAGT CTAGTTTTTC TTTCGGAATA GCTTGCCAAG TGACTTTATG AGTTTTAGGG	8580
AAACCTTTGT CATACTCAAC TGTTACTGTT GCTGGAAGAC TTGGTTCCTG ATGCAAATCT	8640
GTCCTACAT TTACAGGACG GATGGATTGC GCAATCTTCT TCTCAGTATT GGCTTGGATA	8700
GTGAGTTCAA CTTGGTCTTT AGCTCCCTCA TATTCAGCGT TCAGAGTGAC TGCTCCTGGC	8760
TTATGCAACT CAAGCATTC TTTACGAATT GCGACTTCCC CTTCACTACT TGTAAGAGAAG	8820

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GTTACTTTAT CAGCTGGTAA TACAGCTTGC GTTCCATCTT GATAGTGAGC TCGAACCGAC	8880
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TTAGGCTGAA TAAAGATGCT CGCACGCATG CCGTTTGCTG CGCTTGCTTG AAGAACTGTA	9060
ACAGCTGCAT TTTTAGCACT TGCTGTGACT TCTGGCAACT TAGCTCCATA AGCAAGAGTG	9120
CGGTATTGCA TTGGTTTTTG ACTAGTAAGA CCTGTTACTG CCTCACCACC AACCGTTACA	9180
GTTGGTACTG CAGGTGCCGC AGGATTGCCT TCTTCTACCA CAAGGGTTGC ATGAATTGGT	9240
TGACCTTCTA AATAACCGGT CGCTTGAATA CGAGAACCTG GAATTGCTAA CTTAGCTTTA	9300
TCTTCTTCGG CAATCTCCCA CTGTGCTCACT TCATACTCTT CAACACTTCC ATCAATCAAA	9360
ACATAGGAAA CAGATTTGTC TACAGAATTC AAGTCAGTAT TTGGAGCAAT ACGTTTCACA	9420
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GCCATACCTT TCACCGTTAC AATACCAGGC TTGCTCACAT CTACTGAAGA CCAGGTTACA	9540
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GTCAGGGTGA ATTTCCCTGC TTGTTTCAGT GATTTGACAA TGGCAACACC TTTACCATTA	9780
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TGATTTTGGT TGTGCCATGG TGTAGGTTCA CCAATATAGT CCGTACCTGT CCAGATAAAC	10500
TGTCCAGCAT AGCCAGCGTT GTCACGGTCA AAAGTCCATG AAGCGGTTGC TGTTTTCCCC	10560
CAACCCACAC GATCATTTCC ATAATCTGAC TGTTCATAAT TACGCTCAGG TCCATTGCTA	10620

937

TGTTTCAATT CACGTTTCAGG GCGATAGTAA CTTCCACGTG TACGGGTAGC TGAAGATGTT	10680
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GTACGTAGGT CAAAATCAGA CCATTTTTCA CCTTTTCGAG CTTCTGGGTG AGTGGCATCT	11040
TTTTCAAAGA AACGTCCATA GTCATAAGGT TTCTTGCCAC CATAACCAGT ATCAAAGGCC	11100
TCTTCCTGAA CGAGTAAACC TAGTTCCTGCT GCGATTTGCA AGGTTTGCTC ACTAGCAGGG	11160
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TGGAATTTAA TACGTTTCACC ATTCAAAGAG AAACCTTCAT TTGGAGTCCA GTGATAGTAA	11340
CGGTAACCAA ACAAATCCTT CTTAGCATCA ACCAATTGAC CGTCACGGTA AACACGCGTA	11400
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TCTAAAATCG CATCTAGGCT TGTGTATTCA TGTGCTTTTA AGGTACGACT CGCTGTACGA	11520
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TTGACATAAA CTTGAGAATC CATGTAGACG CCATCAAAAG TAAGGCGAAC ATTTTCTCTG	11940
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TCACCTTTGTT CTGTCCTTTC AACTATATTT TTAGTTTCCA AAGCTTTATC AGCCTTTTCT	12420
TCTACTATCA TTTTTCCTC TTTAGGTTTC TCAGCAGTAT GAGTAATAAG TGTTCATCC	12480
GCATAAACTA CAGATCTCC AGCTATATTT CCTCCTAATA AACTGCACA AGTCCCAATC	12540
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ATCTGCATCT GCAACACCTG CAATTGGATG TGGAGTTCCC ATAATACCGA TAACGATACC	13740
AAGGATGAAA CCGATGAAGA ATTTAGATCC CCAGAAACCG ATTTTCTTGT TCAATTTAGC	13800
AGCATCAAAG TCATATTTAT CAAGGCCTGG GAAGAATTTT TCAAAAATCT TATCCAAAAC	13860
CATGATAACT GGGTTCATCA TGTAGTTCAT GTGAGTTGAT GTCATTGGTG ATGAACTTGG	13920
GGCGTTAAGA AGGTCATCAA ATGTAGGTTT CATCAAGTCA GAGTTGATAA TTTTCAACAC	13980
ACCGACAAGG ACGATAGCTG CTGTAGCAAT AAAGAGTGAA ACCCCTTGAC TCACACCATT	14040
GTATACAGCA TACCATTTAA TCAAGAGACC TGTGATAGAC AAGTGCCAGA TATCAAAGAT	14100
ATCGACATCA AGTGATCTG TTTTCTTCAT AGCTAGCATC ACTATGTTGA CAATCAACAT	14160

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GATGAGCAAG AAGTATAGTG TCCAAGCAGA ACCCCAAGTG ATTGTAGCAA GTGGTGCCCA	14220
ACCAACGTCG GTAATACTCA ATTGGATACC AGTGTTTTCA ACGAATTTTG CTAGTGATGC	14280
TGAGAAAGCA GTGTTTAGCA TACCGATGAT AGCACCGATA CCTGTAAGAG CGATGGCAAG	14340
TTTGATACCA CCTTCAAGCG CTTTGGAGAA TTCTACTCCA AAAAGTAAAG CCAATACTGT	14400
CAAAATGATT AACATGATGA CAGGTCCACC CATTTCTAAG ATGGGATTGA AAACCTTTCC	14460
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GGAGCGCTCA TTGCTGGGAT ACGGAATAAG ATTGGCCCAG CTTGATAAC TGGGATACCT	14640
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ACTTGAATTA TTAATGATAA AGAAGAGTAG GGATACTTCT ACTTCCTTAT CAGGAGCTAT	15060
CATATTGTGA AAAGTTATTG GTTTTTCTAA TCGAACAACC ACCACTTTCT CAGCTAGATT	15120
ATGAACAATA TCTGTGTGAG GAATCGCTAC ATTTGGCAAG TCCTTTCCTA GAAATTCAT	15180
ATCTAAACCA GTTGGAATG ACTTTTCACG CGTGATCAAG GCTTCACGAT AAGTTGGAGT	15240
GACAATTTCT CGTCTTCCA ATAAAGTTGC AACCTGATCA AAGAGTTGTT CTTGACTATC	15300
CGCTTCTAAG CAAAACACAA GGTTTTTGTC AAAGAAATAA TCTAATACCA TAAGTTTTTC	15360
CGG	15363

(2) INFORMATION FOR SEQ ID NO: 140:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 28882 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 140:

TAAGACTATT TAATAGTGGA GTGAAATAGG ATACGAACAA ATTGATTAGG AAAATCAAAT	60
GAATTTATAG AAATCTTTTA GCAGTTATGT TATCCTATTC TAGTTTCAA ACGCTATAGA	120

940

AGCAGCATTG TGCTAGTCKA GATTCAGTTT ACTATACTAA AACGAGTAGC TTGAAATCAA	180
AAAACCCACC CTCACAGGCA GGTTTTATCT GTATTATTCA GCTAGATTAT GCTTTACCTT	240
CTGAACCGAA TACGTCGATA CGTCTTCAA CCGATGCTTG GATAGCTTTT ACACCGTCAG	300
CCAAGAATTT ACGTGGGTCG AAGAGTTTTT TCTGTGCGTA TTCTGCTTCG TTTGCTTCGT	360
AGTCACGAGC AAATTACGA GTTGCCTTAG CGAATGCGAT TTGGCATTCT GTGTTAACGT	420
TAACTTTGGC AACACCAAGT TTGATAGCTG CTGGGATTG CTCATCAGGA ATACCTGATC	480
CACCGTGCAA TACGATTGGG AATCCTGGAA GAGCTTCTGT CAATTTTGC AAGTGGTCAA	540
GGTCAAGACC TTCCAGTTT ACTGGGTAAG GACCGTGGAT GTTACCGATA CCAGCTGCCA	600
AGAAGTCGAT ACCAGTTTCA ACCATTGCTT TAGCGTCTTC GATTGGAGCC AATTACCTT	660
TACCGATGAT TCCATCTTCT TCACCACCGA TAGTACCAAC TTCAGCTTCT ACTGAGATAC	720
CTTTAGCGTG TGCTTTTCA ACAACTTCTT TAGCCAATTT AAGGTTTCT TCAACTGGAA	780
GGTGTGAACC GTCAAACATG ATTGAAGTAT AACCAACTTC GATACACTCA AGTGCATCTT	840
CGTAGTGACC GTGGTCAAGG TGGATAGCTA CTGGTACAGT GATACCCATT GATTCAACAA	900
GGTTAGCGAT CAAGTGCAG GCAACTTTGT AACCACCCAT GTATTTAGCA GCACCCATTG	960
AAGTTTGAT CAAAAGTGA GCTTTTTTAG CTCTGCTGC GCGCAAGATA GCTTGAGTCC	1020
ACTCAAGGTT GTTTGTGTTA AATCCACCAA CTGCATAACC GTTGTCACGG GCTGCTTGA	1080
CAAATTTTTC TGCTGAAACG ATTGCCATTT TATCAGGCCT CCTGTATATT TTTATGGGTC	1140
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TAATTTTCA TGTCTAATA GACTCTTAAC CACAAAGAGC CCCATACCAG ACCCCTTGAC	1380
CTTGCGACTG GCATTGTCAG AAAAAGACTG GGCTAGTTT TCTTGTTCCCT CTGAGCTACA	1440
GCTATTTTCG ATAAAAAGTT CTCCTTCTCT TTCTCCAATT CGAACTAAGC CACCTGGAAC	1500
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TAGATAAGCC TGCTGATGGG TCAAACTATT GTCTATCTGG AGCTCTCTTT CCTTGGCTAG	1620
CAAGGCATAA TCTTTGACCA GATTTTGCGT CATCTGGAGG AGGTCAATTG TTTCCCTATC	1680
ATCTCGCAAT TCCTGCACAG AAGAGAGGGA AAGTATCTGC AGAACATGGT GATTGAGTTC	1740
ATCCACAATC CCCAAGGCAA CTCCAGATA CTGGTCTCTA TCCTTATAAC GACCGATATT	1800
CTCTCTCATA TTTTCGATTA GGATTTTCAA ACTAGCCAGC GGTGTTTTCA ATTCATGAGA	1860
AGCTCCTCGT AGGAATTCGA CCTTCATCTT CTCCAGCTGG AGAATGGCTT CATTCCTTTC	1920

941

ATGCAAGTCC GCAATAACAG TCAAGAGATG CTGGTAGAGG CTATTGATTT GTTCCTTGAG	1980
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CCGACGGGTC ACCCGCTTGA TTTCCAAAAT CGGTGCAACA ATAGTCCGAG CGTAGATGTA	2100
GGCCACCAAA AGGGAATCA GAAAGGAGGC CAGCAAGGTA TAGGGAAGAA ACTGGAGACT	2160
GATTTGCTCC GCTTCCTTTT GTAAATCCAT GGAAGCTAGA AACTGGAGAA TCATAGTACC	2220
ACCGTCTTGC GTTTTCACCT CGCGCTCCTC AATAAAGAGA GAGGTGTCTT GCGGTCTGT	2280
GTCCAGAGGA AGACTGTCTT TGACTTCTAA CTTGTCTCTG GTCATCTCAC CTTTGACGGT	2340
CCCCTTGATA TCACTAGTCT GGAATACAA GTCTAACACT TGCTCGATAC TCTGCCTATC	2400
TTTCCCTTCT AGGGACTGGG CAATGGCTGT TGCCTTTTGA CCAATGGTTT CCTGACGATG	2460
ACTCAGATAA GTCGAAGGAA AAAGAAAATA AATAGCTAAA TGAAGGCAGA TAACCAGAAC	2520
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CGCTCCAATT TATAACCAAC ATTGCGCACA GTGAGGATAC AATCCAAGTC TAGCTTTTTC	2640
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CTCTCTATTT TTTATTTTTC TTAGAATAAA TACCTACCCT ATTTTCTATT ATAGTCTCTT	3300
GCTGGCCTTT TGTCTGCAAG CAACTGACCA CTAGATAAAA CGTTGTGAAA TTCTTTCTC	3360
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AAGCAATGAT TTTCAACCACT GCTTTCGGAT TTATTTTGAA TTGTAAATA GCCATTCTTA	3480
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GCGCCATAAC GAGAACCACT AGAACCAAGG CAAGGACAAA AATGATGATA AAGTCTGATG	3660

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TCTGAATGGA AATGTCTAGG CTCGACAAGG TCTTGCTAAA GCCATCTACT TCTGCACCAC	3720
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TGGCAAGGAC AGTGTTCCTA ATTGCACGGG CAGTGTAAAT AGCTAGGAAG TAAGCAGAAA	3840
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TGAGCAAGAG GGCAAGGAGG AGAACTGAGA AGCTCAAGCT ACCCCAGAAG AGGAGGTTGG	4020
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CGAGTGTGTA GCTCTTCCAG TTGATACCAC TGATGCCATT CAACTCTTTC ATAACATCAT	4140
CCAAGTCTCT GTCTGCTGTT ACAAAGAAGG TTGCGTCCCC ATAAATGGCT GTGTCTTCTG	4200
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CTTGTGAGTA GGTTACTGCT GACTTATTAT GACCATCAAA GAGTCCCTTG ATTGTCACTT	4320
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CAGCTAGAAT AACTGGAGCT TCTGAGACCA AACTGCGAGC AATGGCAACA CGTTGCTGTT	5220
GACCACCTGA TAACTGGAGA ACATTCCGCT TGATCTGGCT TTCATCCAAA CCAAGCTCAA	5280
GAAGTGATTT CTTGCTTGCC TTTTGTGTA CCAATCGGAT ATTTTCCAGC GGAGAAAGAT	5340
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AGCCCTTCTT ACGAATATCC TCTCCTTGAA AAAGGATAGA ACCTTCAACA GGAATATCTA	5460

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CTCCCCA ATAATACTGT	
AAAATTTTCC GGGTTCAAAA TTATAATTGA TCTGATATAG GACTGCTTCA GCAGTATTCT	5580
TATAACGGTA GGTAACATCT TGTAATTGTA ATAAAGTCAT GATTTCTCCT TCTTAACTAA	5640
TAGATGATAA AATTTCTTTC GGTGATTTTC TAAATAAGAA TAGGAAACAA AGGGCTACAG	5700
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CAAGTGCAAG TAAAATCCCC ACTTCATAGA CCCGTCTCT CAACCAGAGA GACAAAACCA	6000
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GGAAAGTTGC AACTGAGTCT TTGATTGTGTT CAAAAGCCTT GTTTTCCTTT TCGACTTGGT	6120
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CGCCAGTCAC TGCTTCCTTG TCTTTTAGTT TTGCGACCGT CTCAAGTTCA GGAGAGACAT	6660
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ATAATCCAAA CACGAAACCA GTCCACGTTT TTCAAGGACT GGTTTGTATA TAGCACGTTT	7140
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CACTCGTAGG CGAGTACGCA AGCGCTCATC TATGCTAGTG ACTATACTTT TCATATTTAT	7440
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CAAAGGTTGG AGCTCCTGCT GGATGATTTT TATTTGCCTC TTTCAAATTT TCAATAATGG	7740
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CTGTCAATTC AAGAAGAGAT TGCTCTGCTT GTTCTTGACT TGGGTTGATG ATGATTGGC 14280

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CATCTACATA	TCCCACTTGT	ACCCCAGCAA	TTGGTCCGTC	AAATGGAATA	TCTGAAATAG	14340
ACAGTGCCAA	AGATGAACCA	AACATAGCAG	CCATTGGTGC	AGATGCATTT	TCATCATAAG	14400
AAAGCACTGT	ATTGATGACT	TGGACTTCAT	TACGGAAACC	TTCCGCAAAC	ATAGGACGAA	14460
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TCATAAAGCC	ACCAGGAAAC	TTCCCAGCCG	CATACATTTT	TTCTTCGTAG	TTGACTTGGA	14580
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ATTGCTACCT GTTCACCACA TTCATATTCT CTAGGATATT TATTTTTTCAT TAATGCTAAC	28860
AAGTCTTCAT CATCATCGTC GG	28882

(2) INFORMATION FOR SEQ ID NO: 141:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 12835 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 141:

GCCTATGTCT TTTTCAAAAA AATGCTTGAC TTGAGACGGG AACTAGGGAA GTCTAAAGGC	60
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TAAAAGACAA TAAATGAGA TAGTTTAGAG GCGGATATCT TGTGAAAAGT AAATTTTAC	5340
TGGGTATCCG TTTGCTTTAT AAGGAGATGA GTTATGGTAT TTACAGCAA AAGCTCTAAA	5400
ATAAATATAG AAGAAGTTCG TGCCTTGTC AATTAGAAG GTCAGGCTTT GGAGAGGAAA	5460
TCACAGCGAG ATCAAGAGCT AGAAGCCATT ATACGTGGAG AAGACCAGCG AATTCTCTTG	5520
GTAATCGGGC CATGCTCATC TGACAACGAA GAAGCTGTCC TTGAATACGC TAAGCGTTTG	5580
GCAGTCCTAC AAGAAGAAGT GGCAGATCGT ATCTTTATGG TTATGCGTGT TTATACTGCC	5640
AAACCCCGTA CCAACGGAGA TGGCTATAAG GGCTTGATTC ACCAGCCTAA CGCGACAGAA	5700
GCGCTAGTC TTATCAATGG AATCAAAGCC GTTCGCCATC TTCACTATCG TGTATCACA	5760
GAAACAGGGA TGACAACTGC TGATGAAATG CTTTATCCTG AAAACCTTCC GCTTGATAGT	5820
GATTTGATTT CTTACATGGC AGTTGGTGCC CGTTCAGTTG AAGACCAGCA ACACCGCTTT	5880
GTGGCAAGTG GGGCAGGATT TTCTACTGGT TTAAAAATC CAACCTCTGG AAATCTCAAT	5940
GTCATGTTTA ATGGGATTTA TGCTGCTCAA AACAAACAAA GTTTCCTTTT CTTAGGAAAA	6000
GAAGTAGAAA CAACTGGGAA CCCGCTTTCA CACGCTATTC TTCGTGGTGC TCTTAATGAG	6060
TATGGAAAAA ATATTCCCAA CTACTATTAT GACAATTTAA TTGATACCAT TGCCAGTAT	6120
GAGAAAATGG GCTTGAAAAA TCCTTTTATC ATCATTGATA CCAATCATGA CAATTCTGGT	6180
AAGCAGTATA TTGAACAGAT CCGAATTGTC CGCCAGACCT TGATTAACCG TGCTTGAAT	6240

960

GAAAAAATTA AGCAGTTCGT TCGTGGTTTT ATGATTGACT CTTATCTGGA AGATGGTCGA	6300
CAAAATGAGC CAGAAGTATT TGGTAAGTCT ATCACAGACC CTTGCCTGGG TTGGGATAAC	6360
ACAGAAGCTC TTGTCAGAGA AATTACAAA ACGTTAGGAG AATAAGATGG CATTATTGA	6420
AAAAGGTCAA GAAATCGATA TGGAAATCAT CAAGGCTGAA ACCCAATTGT CTGCGGAAGC	6480
CTTGAGACTC AAGGAAAGCC GTGACAGGGA ATTGGCAGAT ATTATTTCAG GGGAAGATGA	6540
CCGTATTCTC TTGGTGATTG GTCCTTGCTC TTCTGATAAT GAAGAGGCGG TCTTGAATA	6600
TGCTCGCCGT TTATCTGCCT TGCAAAAGAA GGTAGCGGAT AAGATTTTCA TGGTCATGCG	6660
CGTGTATACT GCTAAGCCTC GTACCAATGG AGACGGCTAT AAAGGATTAG TTCACCAGCC	6720
AGATACTTCT AAGGCTCCAA GCCTGATTAA TGGCTTGCAG GCTGTGCGCC AGTTGCACTA	6780
CCGCGTGATT ACAGAGACTG GTTTGACAAC GGCAGATGAG ATGCTTTATC CGTCAAATCT	6840
GATCTTGGTG GATGACTTGG TCAGCTACCA TGCCGTTGGA GCTCGTTCTG TGGAAAGCCA	6900
AGAGCACCGC TTTGTGGCTT CTGGGATTGA TGACCAGTA GGGATGAAAA ATCCAACCTC	6960
AGGAAATTTG GGTGTTATGT TTAACGCCAT CTATGCTGCT CAAAACAAGC AAACCTTCCT	7020
TTATCATGGG CAGGAAGTTG AGACATCAGG TAATCCTTTG GCCCATGTTA TCCTCCGTGG	7080
AGCAGTCAAC GAGTATGGCA ATTATATGCC GAATTACTAC TATGAAAATC TACTCCAAGC	7140
CATTGAACGC TATGAAACCA TGGGACTTGA AAATCCTTTT ATCCTCATTG ACACCAACCA	7200
TGATAACTCA GGCAAGCAAT ATATGGAGCA GATTCGAATT GTTCGCCAGA CCTTGCAGAA	7260
TCGTGATTGG AATGAGAAAA TTA AAAAGAC GGTTGAGGA TTTATGATTG AATCTTACCT	7320
AGCAGATGGT CGTCAAAACC AACCAGAGAT CTTTGGTTGC TCTATTACTG ACCCTTGCCT	7380
AGGTTCGGAA AATACAGAGG CCTTGGTAGA AGAGATTAT GTTACCTTGA CAAAATAAGT	7440
GAAAAGGATG GAGTTGGGGA ATCTCAACTC CTTTGTATGA GAATGATAGT TGGACACGGA	7500
ATTGACATCG AAGAATTGGC TTCGATAGAA AGCGCAGTTA CACGACATGA AGGATTTGCT	7560
AAGCGGTAC TGACCGCTCA GGAAATGGAG CGCTTCACCA GTCTCAAAGG ACGCAGGCAA	7620
ATAGAATATT TAGCTGGTCG CTGGTCGGCT AAGGAGGCCT TTTCCAAGGC TATGGGAACG	7680
GGCATTAGCA AGCTCGGTTT TCAGGATTG GAAGTCTTGA ACAATGAACG TGGGGCGCCT	7740
TATTTTAGTC AGGCACCATT TTCAGGAAAG ATTTGGCTGT CTATCAGCCA CACCGATCAG	7800
TTTGTGACAG CCAGTGTCAT TTTGGAGGAA AATCATGAAA GCTAGTCCAC ATAGACCAAC	7860
CAAGGCTCTG ATTCATCTGG GAGCTATTCG ACAAATATT CAGCAAATGG GGGCTCATAT	7920
CCCTCAAGGA ACGCTCAAGT TGGCTGTGGT TAAGGCCAAT GCTTATGGTC ATGGAGCTGT	7980
TGCCGTTGCC AAGGCAATTC AAGATGATGT TGATGGCTTT TGCCTTTCCA ATATCGATGA	8040

961

AGCCATTGAA CTCAGACAAG CTGGACTCAG CAAGCCAATC CTCATTTTAG GAGTTTCTGA	8100
AATCGAAGCT GTTGCTCTAG CTAAAGAATA TGAATTCACC TTGACAGTGG CTGGACTGGA	8160
GTGGATTCAA GCACTCTTAG ATAAGGAAGT GGACCTAACT GGATTGACAG TCCACCTCAA	8220
GATTGATTCA GGGATGGGAC GGATTGGTTT TAGAGAGGCA AGTGAGGTTG AGCAGGCTCA	8280
AGATTTGCTC CAACAACACG GTGTTTGTGT TGAAGGAATC TTTACCCACT TTGCTACTGC	8340
TGATGAGGAA TCAGATGACT ATTTTAATGC CCAGTTAGAA CGGTTTAAAA CTATTTTAGC	8400
TAGTATGAAG GAAGTTCCAG AGCTGGTTCA TGCTAGCAAT TCTGCAACGA CTCTTTGGCA	8460
TGTAGAGACT ATTTTCAATG CGGTTCTGAT GGGAGATGCC ATGTATGGCC TCAATCCAAG	8520
TGGAGCGGTC TTGGATTTCG CTTATGATTT GATACCGGCC TTGACCTTGG AGTCTGCTCT	8580
GGTTCATGTC AAGACAGTTC CAGCTGGAGC TTGCATGGGC TATGGAGCAA CTTATCAAGC	8640
GGATAGCGAG CAAGTCATCG CGACCGTGCC AATCGGGTAT GCAGATGGAT GGACAAGAGA	8700
CATGCAAAAT TTCTCTGTCT TGGTAGATGG CCAAGCTTGC CCAATTGTCTG GCAGGGTTTC	8760
GATGGACCAA ATCACTATTC GATTGCCTAA GCTTTATCCG CTAGGAACCA AGGTAACCTT	8820
GATTGGCTCC AATGGGGATA AGGAAATCAC TGCAACTCAG GTAGCGACCT ACCGCGTAAC	8880
CATTAACAT GAGGTGGTTT GCCTCCTCAG CGACCGTATT CCGAGAGAAT ATTATTAGAA	8940
AAGAAAGGAG TGGAGCATGA ATCTACATCA ACCCTTGCAT GTCTTGCTTG GTGTGGGACC	9000
AAAGTCAGCA GAAAATACG CCAAACCTAGG AATTGAAAAC TTGCAAGATC TCTTGCTCTA	9060
CTTTCCTTTC CGTTATGAAG ACTTCAAAAC CAAGCAGGTG CTGGAGCTGG AAGACGGTGA	9120
GAAGGCAGTT CTTTCTGGTC AGGTAGTGAC TCCTGCTAGT GTCCAGTATT ATGGTTTCAA	9180
GCGCAATCGC CTGCGTTTTA GTCTCAAGCA GGGAGAGGTC GTTTTTGCGG TGAATTTCTT	9240
TAACCAGCCC TATCTGGCTG ATAAAATAGA GTTGGGAGCA ACCCTTGCTG TCTTTGGAAA	9300
ATGGGACCGC GCTAAGGCTA GTCTGACTGG GATGAAGGTT CTGGCTCAGG TAGAAGATGA	9360
CCTCCAGCCT GTCTATCGTC TGGCTCAGGG AATCAGTCAG GCCAGTCTGG TCAAGGTCAT	9420
CAAGACGGCT TTTGATCAGG GACTGGACCT CTTGATAGAA GAAAATCTGC CCCAGTCTTT	9480
ACTAGACAAA TACAACTCA TGTCCCGTTG TCAGGCAGTC CGTGCTATGC ATTTTCCAAA	9540
GTATTTGGCA GAATACAAGC AGGCTCTTCG CCGTATAAAG TTTGAGGAAC TCTTTTATTT	9600
CCAAATGCAG CTGCAGATGC TCAAGTCTGA AAATAGAGTT CAGGGAAGTG GTCTGGTTCT	9660
GAATTGGTCT CAGGAAAAAG TGACAGCAGT TAAAGTAACT CTTCTTTTGT CCCTGACCCA	9720
AGCTCAGGAA AAGAGTTTGC AGGAAATTTT AACTGATATG AAGTCCGACC ACCACATGAA	9780

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TCGTCTCCTA CAAGGGGATG TGGGGAGTGG AAAAACGGTA	GTCGCTGGCT TGGCCATGTT	9840
TGCGGCAGTG ACAGCAGGTT ATCAGGCTGC CCTAATGGTA	CCAACAGAAA TCCTCGCAGA	9900
GCAACACTTT GAGAGTTTAC AGAACCTTTT TCCCAATTTG	AAACTGGCTC TCTTGACAGG	9960
TTCCCTGAAA GCTGCAGAAA AGAGAGAAGT CTTGGAGACC	ATTGCCAAGG GTGAGGCTGA	10020
TTTGATTATA GGAACCTCAG CTCTGATACA AGATGGGGTG	GAGTATGCTC GTCTTGTTT	10080
GATTATTATC GATGAGCAGC ACCGTTTTGG TGTAGGGCAA	AGGCGTATTT TACGGGAAAA	10140
AGGTGACAAT CCAGATGTCC TCATGATGAC GGCGACTCCC	ATTCCACGGA CGCTTGCCAT	10200
CACAGCCTTT GGAGATATGG ATGTTTCCAT TATCGACCAG	ATGCCAGCAG GTCGGAAGCC	10260
TATTGTGACG CGCTGGATCA AACATGAGCA ACTACCTCAG	GTCTTGACTT GGTTAGAGGG	10320
GGAAATTCAA AAAGGTTCCC AAGTCTATGT CATCTCTCCT	TTGATTGAAG AATCAGAAGC	10380
TCTAGATTG AAAAATGCCA TTGCCTTATC AGAGGAGTTG	ACGACTCATT TTGCAGGCAA	10440
GGCAGAGGTG GCTCTTCTAC ATGGTAGGAT GAAGAGTGAC	GAAAAAGACC AGATCATGCA	10500
GGATTTC AAG GAGAGAAAGA CGGATATTCT GGTTCGACG	ACGGTTATTG AGGTTGGGGT	10560
CAACGTTCCC AATGCGACTG TCATGATTAT CATGGATGCC	GATCGCTTCG GTCTCAGTCA	10620
ACTTCACCAG CTTAGAGGTC GTGTCGGTCG GGGGACAAG	CAGTCCTACG CTGTTCTCGT	10680
TGCTAATCCC AAGACGGATT CTGGGAAAGA CCGCATGCGT	ATCATGACAG AAACGACCAA	10740
TGGATTGTG CTTGCGGAGG AAGATTGAA AATGCGTGGT	TCTGGTGAGA TTTTGGAAAC	10800
CAGACAGTCA GGACTTCCAG AGTTCCAAGT GGCTGATATT	ATCGAAGATT TTCCGATTTT	10860
AGAAGAAGCA AGAAAGGTTG CTAGCTACAT TAGTTCTATA	GAAGCTTGGC AAGAAGATCC	10920
AGAGTGGCGC ATGATTGCCC TTCATCTGGA AAAGAAAGAA	CATCTGGATT AAGCTTTCTC	10980
TAAGGAAAAC TTATACTCAA TGAAAATCAA AGAGCAAACT	AGGAAGCTAA CCGCAGGTTG	11040
CTCAAAACAC TGTTTTGAGG TTGTGGATGA AACTGACGAA	GTCAGCTCAA AACACCGTTT	11100
TGAGGTGGCA GATAGAACTG ACGAAGTCAG TAACATATAT	ATACGGTAAG GCGACGCTGA	11160
CGTGGTTTGA AGAGATTTTC GAAGAGTATT AAGCTAGTTT	TTAGGTTTGG CTCTTATACT	11220
AGAGTCATCA AAAAGAAACG AGGACTCTCA TATGACAGTA	ACGATTAAAG TAAATTACCA	11280
AACCACTTTC CAAAAGAAGG AAGCAAAAAA CTAGTATAAA	CAGAAGAGAG AGCGAAATGC	11340
TCTTTTTTCG TTTCTAAAAC TACTTTCAGC CCATCATCCT	AAAAGTAAAG AATCTAAATT	11400
CACTTTCTAT TTACCCTTCT TTCTTGCAAT GATTACATAG	ATATGCTACA GTTGTGGTAA	11460
CGATTACAAA ATAAAAGGAG CATGCTATGA AAAATCCAGC	TTTGCTAGAA GAAATTAAGA	11520
CCTATAGAGG AAGGGATGAG GTTCCGGAAG ACTTTGATGA	TTTCTGGGAT GGGGAAGTGA	11580

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AAAATGTTTC CACGCTTCCA TCCTACCACT TGGAGGAAAG AGATTTCCAC ATTCCTCAAG	11640
TCAAGTGCTA TGAGTTAACA TTTGAAGGAA GCAAGGAAGG AAAGGTCTAT GCACGCATTG	11700
TTCTTCCAAA GAGTGAGGAG AAGGTCCCAT TAATCTTCCA TTTTCATGGT TATATGGGAC	11760
GTGGCTGGGA CTGGGCCGAC ATGCTGGGCT TCACCGTAGC TGTTTACGGT GTTGTTTCCA	11820
TGGATGTGCG GGGCCAGTCA GGTACTCAC AAGACGGCTT GCGTTCTCCT TTAGGAAATA	11880
CCGTGAAGGG GCATATTATC CGTGGTGCTG TGGAAAGTCG GGACCACCTC TTTTATAAGG	11940
ATGTTTATCT GGATATTTAC CAGTTGGTCG AAATTGTTGC TAGTCTGTCT CAGGTTGATG	12000
AGAAGCGTCT TTCTAGCTAT GGTGCCTCAC AAGGAGGGGC TCTAGCTCTA GTTGCAGCAG	12060
CGCTCAATCC TCGAATTCAG AAAACAGTTG CCATTTATCC CTTCTTGTC AACTTCAGAC	12120
GGGTGATTGA GATTGGTAAT ACTAGCGAGG CTTACGACGA ACTTTTCCGT TATTTCAAGT	12180
TTCACGACCC CTTCCATGAA ACAGAGGAGG AAATCATGGC GACCCTTGCC TATATCGATG	12240
TCAAAAATCT TGCCCATCGT ATCCAAGGTG AGGTTAAGAT GATTACGGGC TTGGACGACG	12300
ATGTTTGCTA TCCCATTACC CAGTTTGCGA TTTATAATCG TCTGACCTGC GATAAACCT	12360
ATCGCATCAT GCCTGAGTAT GCTCACGAAG CCATGAATGT ATTTGTCAAT GACCAAGTCT	12420
ACAACCTGGCT CTGTGGAAGT GAGATTCCTT TTAAATATCT AAAATAAGGA GTCGACTCTA	12480
AGCACAAAAT CTTAAAAATT ACAACACGC ATAGTATCAG GGGATTAAGA AAACCTTTATA	12540
CTATGCGTTT TATCATGGAA ATATAGTAAA ATGAAATAAG AACAGGACAA ATCGATCAGG	12600
ACAGTCAAAT CGATTCTAA CAATGTTTTA GAAACAAATG TGTACTATTC TAGTGTCAAT	12660
CTATTATATT TATAGAATTT TTTGTTGCTA GATTTGTCAA ATTGCTTAAA ATAATTTTTT	12720
TCAGAAAGCA AAAGCCGATA CCTATCGAGT AGGGTAGTTC TTGCTATCGT CAGGCTTGTC	12780
TGTAGGTGTT AATACTTTTC AAAAATCTCT TCAAACCACG TCAGCTTCGC CTTGC	12835

(2) INFORMATION FOR SEQ ID NO: 142:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 5020 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 142:

GGGGATATGA AGAACAAAAG AATATTTAAA GACTTCCAAG CTTCAAAAAT GAGTTTAAAC	60
ATTTACACAA GCCCCCTGTT AGCCTTTGTT TTTGTCTTCA TAGGAGAGTT TGTGGCTTTT	120

964

ACTTTGTATG GTATTGGCTT GTTAGCTCTC ATCGGACTTG CTAGAAATTT TGGAGAGGCT	180
GGTCAAAATC TTGCAAGCTA CTTGCAGACC TTGCATCAGA GCTTGACGGA TAAAACAAGT	240
GACTTTCGTT TAATTTTAGG ATTACTGGCC TTTGGTTATT CTTAACACTG TGTTTCAGATG	300
GACAAGAAAA GTTGAGAAAA GACCTATTCG AACCTTGGGA TTTTATAGAG AGAATTTCCCT	360
CAGCAATCTT CTGAAAGGAT TTAGTCTAGG CCTGGCACTT TTTCTTCTGA CCTTGTTAGG	420
TTTAGTGGTC TTAGGTCAAT ATCGTTTGGA ATCCATTAC TTGAATCCTT ATTCTCTTGC	480
CTTTGTGCTG TTTACTATCC CATTTTGGAT TTTACAGGGG ACAGCAGAAG AAGTGGTGGC	540
CCGTGCTTGG CTACTTCCTC AATTGGCCTC AAGAACCAAT CTAAAACTAG CTATTCTTAT	600
ATCTAGCCTG TTTCTTACCC TGCTTCATAT GGGCAATTCT GGTCTCACCC CTCTATCTCT	660
AGTAAATCTC TTTTATTTCG GAGTTGCCAT GGCTCTTTAC CTTCTCAAAA CTGATACAGT	720
TTGGGGTGTT GCAGGTATTC ATGGTGCTTG GAATTTTGCT CAGGGTAATC TCTTTGGGAT	780
TTTAGTTAGT GGTCAACCGT CAGAACGTCT CTGATGACCT TTTTACCACA AGGCAATCAA	840
GATTGGCTAT CAGGTGGTTC TTTTGGCATA GAAGGTCCA TTATGACAAG TCTGGTATTA	900
CTACTGCTGA TTGTCTATCT TGCTAATAAA TTAAAGAAAG AAAATGAAAG GATGTGACTT	960
CGGTCCGTCC TTTTCTTCGT GAAAATACTA TAAGTATGCT AAAATAGGAA TAGCACATGG	1020
AGAGAGGATT CTTATGATCA ATCACATTAC AGATAATCAA TTTAAACTAG TATCAAAATA	1080
TCAACCATCA GGAGATCAAC CCCAAGCTAT CGAGCAGTTG GTGGATAACA TTGAGGGGGG	1140
AGAAAAAGCT CAGATTCTGA TGGGGGCGAC TGAACAGGG AAGACCTATA CTATGAGTCA	1200
GGTCATTTCT AAAGTCAATA AACCAACTCT GGTATTGGCC CACAATAAAA CTCTGGCTGG	1260
TCAGCTCTAT GGGGAGTTTA AGGAATTTT CCCTGAAAAT GCAGTTGAGT ATTTTCGTATC	1320
CTACTATGAT TATTACCAGC CAGAGGCCTA TGTCCCTTCT AGCGATACCT ATATTGAGAA	1380
GGATAGTTCT GTCAATGACG AGATTGACAA GCTTCGCCAC TCAGCTACCT CAGCCCTTTT	1440
GGAGCGTAAT GATGTTATTG TCGTGGCCTC AGTCTCTTGT ATCTATGGTT TGGGTTCCGC	1500
CAAGGAATAC GCTGATAGTG TCGTTAGTCT CCGTCCTGGT CTAGAGATTT CTCGTGATAA	1560
ACTCTTGAAT GACTTGGTCG ATATTTCAGT TGAACGTAAT GATATTGATT TCCAACGCGG	1620
AAGATTTTCG GTTCGTGGGG ATGTGGTAGA GATTTTCCCA GCTTCCCGAG ATGAACATGC	1680
CTTTCGAGTA GAATTTTGTG GAGACGAAAT TGACCGTATT CGTGAAGTTG AGGCTCTGAC	1740
AGGTCAGGTG TTGGGAGAAG TGGATCATTT AGCGATTTTC CCAGCGACAC ACTTTGTGAC	1800
CAATGACGAC CACATGGAAG TTGCCATTGC AAAGATTTCAG GCCGAGTTGG AAGAACAATT	1860
AGCTGTCTTT GAAAAGGAAG GTAAACTGCT TGAAGCCCAG CGTTTGAAAC AGCGGACAGA	1920

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GTATGATATC GAAATGTTGC GTGAGATGGG CTATACCAAT GGGGTTGAAA ATTATTCTCG	1980
CCACATGGAT GGACGGAGCG AAGGAGAGCC TCCTTATACG CTTCTCGACT TCTTCCCAGA	2040
TGATTTCTTG ATTATGATTG ACGAGAGTCA TATGACCATA GGGCAAATCA AGGGCATGTA	2100
CAATGGAGAC CGTTCGCGTA AAGAAATGCT GGTTAATTAT GGTTCCTGTT TGCCGTCTGC	2160
TTTGGACAAT CGTCCTCTCC GTCGGGAGGA GTTGAGAGT CACGTTTCATC AGATTGTTTA	2220
CGTTTCAGCG ACACCTGGTG ACTATGAAAA TGAACAGACC GAGACAGTGA TTGAGCAAAT	2280
CATTTCGTCCA ACGGGACTCT TGGATCCAGA GGTGGAAGTC CGTCCGACTA TGGGACAGAT	2340
TGATGACCTC TTGGGTGAAA TCAATGCCCG CGTTGAAAAA AATGAGCGTA CCTTTATCAC	2400
AACTTTGACC AAGAAAATGG CAGAGGATTT GACCGACTAC TTCAAGGAAA TGGGTATCAA	2460
GGTCAAGTAC ATGCACTCGG ATATCAAGAC CTTGGAACGG ACGGAGATTA TCCGTGACCT	2520
GCGCTTGGGT GTCTTTGATG TCTTGGTCGG AATTAACCTG CTCCGTGAAG GAATTGACGT	2580
TCCTGAAGTG AGCCTCGTAG CTATTCTCGA TGCTGACAAG GAAGGTTTCC TTCGCAACGA	2640
ACGTGGACTC ATCCAGACCA TTGGACGTGC TGCACGTAAT AGCGAAGGTC ATGTTATCAT	2700
GTATGCGGAC ACGGTTACCC AGTCTATGCA ACGTGCTATC GATGAAACTG CCCGCCGTG	2760
CAAAATCCAG ATGGCCTATA ATGAAGAACA TGGTATCGTT CCACAAACCA TCAAGAAAGA	2820
AATCCGTGAC TTGATTGCTG TGACCAAGGC AGTTGCTAAG GAAGAAGACA AGGAAGTCGA	2880
TATCAATAGC CTCAACAAAC AAGAGCGCAA AGAACTAGTC AAAAAGCTTG AGAAACAAAT	2940
GCAAGAAGCA GTTGAAGTGC TTGACTTTGA ACTAGCAGCT CAGATTCGTG ATATGATGCT	3000
GGAAGTCAAG GCCTTGGATT AGGGGAATAG TATGATTTAT TTAAGAAAGT TAAAGAAAGA	3060
AGATTTGATG TCTTTATGGG AAATGGCTTA TTCACAGCTT AATCCAGTTT GGAACAGTA	3120
TGATGCTCCC TATTATGATG ATTATCAGTA TTTTTCAAAT TTTAAAGAAT TCGAACTACA	3180
AAAATCAGAA TCCATTTTAA GCAACTCAAA TCGCCTTGGT ATTTTGTGTG ATGATAAACT	3240
AGTTGGGACT GTTTCGCGTT ATTGGGTATG TAAAGAAACA AGATGGATGG AATTGGGAAT	3300
TGGTATTTAT GATAAAAAAT TCTGGAACAC TGGTATTGGG AAAGTTGCTA TGTGTCAGTG	3360
GATAGATAGG ACGTTTCAGG ATTACTTGGA GTTGAGCAT CTGGGTTTGA CAACTTGGTC	3420
AGGAAATATT GGTATGATGA AACTTGCTGA AAAATTAAGA ATGAAAAAAG AAGCTCATAT	3480
TCCAAAAGTT CGTTATTATC AAGGTAAATA TTTTGACAGT ATTAAATATG GTATTTTGAG	3540
AGAAGACTGG GAGAAAATAA ATGACGGTTA TTATCAAATC AATGGAAACT CCTGAAGAGA	3600
TAGAAGGTAA ATCCTTCGTT CACTGGCAAA CGTGGAGAGA GGCTTATGAT GACCTTTTGC	3660

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CTGCGGAATT TCAGGAGACA ATGACATTAG AAAGATGTCG ACTCTTTAGT CAAAAGTATC	3720
CAGAAAATAC ATTGATTGCG ATGGATGGTG TGAAGATAGT TGGTTTTATA AGTTATGGCA	3780
ACTGTCGTGA TGAGACTATT CAAGCTGGTG AAATTATTGC TTTATATGTT TTAAAAGACT	3840
ATTATGGAAA AGGAATCGCA CAAAAGTTAG TGAAAGCAGC TTTGACTGAT CTTAATCATT	3900
TTTCTGAAAT TTTCTTATGG GTATTGAAAG ATAACAAGCG CGCCATTGCT TTCTATCAAA	3960
AAATGGGTTT TACTTTTGAT GGACAAGAAA AAATACTTGA ACTTGGAAG CCTATAAAGG	4020
AAAAACGGAT GGTATTCTAT TCTAAATAAT TCTCAAAAGT AAAAGCTAAT ATGGTACCAA	4080
GTCTGAAAAT TTAATAAATT AGAAAGCGAG TAAATTTATG TCCCGTTCCC AATTAACAAT	4140
TTTAACAAAT ATCTGTCTGA TTGAAGACCT CGAAACTCAG CGCGTGGTGA TGCAGTATCG	4200
CGCCCCTGAA AACAAATCGCT GGTCTGGTTA TGCCTTTCCT GGAGGTCATG TAGAAAATGA	4260
TGAGGCTTTT GCGGAGTCTG TCATTCGTGA AATCTACGAA GAAACAGGGT TGAATATCCA	4320
AAATCCTCAA CTTGTCGGCA TTAAAAATTG GCCACTAGAT ACAGGTGGGC GCTATATTGT	4380
CATTTGTAT AAGGCGACTG AGTTCTCTGG TACCCTTCAA TCTTCAGAAG AGGGAGAAGT	4440
TTCTTGGGTG CAAAAGACC AGATTCCAAA CTAAATCTG GCCTATGATA TGCTACCATT	4500
GATGGAATG ATGGAAGCTC CCGACAAGTC AGAGTTTTC TACCCTCGCC GTACAGAAGA	4560
CGATTGGGAA AAGAAAATCT TCTAGTCTTT TACTAAATAA CCTAGCTGAT CCAAGGCCTC	4620
CTCGATATAG TGGAGGTCTT GTTGTGTCTC GGCTTCAACT AGGTGATAAT GAATACCATC	4680
TGTTAACTCA GAAATTGGCT TAAAGTCAGA ACGTTCAACT TGTTCAGAA AATGTTGCAC	4740
GTCGCGGCGA CAGGTCAGTT TTAGTAAGGT TTCAATCTCT CCATAAACAG GATGATCAAT	4800
CAAGATATTT TGAACGCGAC CACCATTATC TACGATAGCA AGTAATTCTC GTCCAATTTT	4860
TTCAACTTCA TGCTTGACCT TAAATAATTT GTGATGATAA GTATTTGCAT TAGCATCTTT	4920
ATAGATATAA CCACGATTGG TAGATAGAAT TGGAGATCCA TCAGCTCTTA AAATTGCAAT	4980
ATCTTGAACA ATAATTGTC GAGTGACATG AAAGTGCTCA	5020

(2) INFORMATION FOR SEQ ID NO: 143:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 4965 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 143:

AAAAAGTGGC AATCCATTGA TTGGCCACTT CATTTAGAGA ATTATCGTCT CGCCCTTGAA	60
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967

GAAGAAGGTC GTGTAGTACT TGAGTTACTG CTATCGCTAG AACTACTACT TGAAGTCTG	120
GAGCTGGATG GAGTTGGTAG ACTCCCCACA ATACTAGACC AAGCATTTCTG ATAATCCGCA	180
TCACTTCCGC CAATAGCAAA GCGATAACTT GTCGCTGGCG CTCCTGACTT ATTAGCCCAA	240
TAGCTGGTAA CAGTCGAACC TGTGACCTCT ACTTCTTTTC CTTCAACAGA AACCTTCTCT	300
GGTTTTTGAC CTGTTGATTT CAAGACTTCC GATTTCAC TA CACTAGGATC TAAAGCAAAG	360
CGCTCGTTCC CCCAAATGCT TGGGGAAGCT TGCTGAATCG CATTACCAG ATGAGCCATG	420
TAATTAGAGT TATTAGAATA ACCTGCTCTA CGTGACAATG AATGATTATC ATCATGCCCA	480
ATCCAGCCAC CTAGGGTTAA TCTAGGTGTC GAAAGCATGA GCCACATATT TTCGTCTTGG	540
TTGGTTGTAC CAGTCTTCCC AATCCAATCT GCATTAGCCA GAGTAGGATT TAAAGAAGTC	600
AGGTTAGACT TGAAGGTGT TGTACACGA GAGGATAGAA CTTCTCGTAG CAATCCCTGC	660
ATAATCGTCG CAGTAGCTTT TGAATAGACT TGAACCGGT TATCCTGATA CTCATACACC	720
ACTCTACCAT CTGCTGCTTC AATCTTTGAA ATCACATGCT TCTGATGATA AACTCCATTA	780
TTAGCTAAGG TCTGATAGCC ATTGGTATGC TGGGCAACTG TGACTTCAAT ACCACCACCC	840
ATTGGCAAGC TCTCAATACC GTACTCAGGA ATCTCGTAAC CCATCTTTTC CATATAACCC	900
TTGACATCAA CACCCTTTTC ACGGAGCATA CGATAGGTCC AGTAAGCAGG GATATTCCAT	960
GAATAGTTCA GAGCTTCTCC CAAGGTCATC ATTCCTGTTT CCTTGCTATT AGCATACATA	1020
ATCGGATTGC CATTAGCAAA GTTTGTTGGA TAGTTAGATA GAATCGTTTC ACTTCCCATC	1080
AAGCCCTGGT CAATAGCAAT ACCGTAGGCC AGCAAGGGCT TGGTAGTAGA AGCTGGCGAA	1140
CGTTTGGTAT CAAAGGCATG ATTATTTTGA TTTTCTTGAT AATTACGACC ACCTACAAAG	1200
CCTAGAATAG CACCTGTTTG GTTATCCATC AAGACATTCC CTACTTCTAC ACGACCTGTT	1260
CCATCGTCTA AAAGATAGCC ATAATCAGCA ACCGCACTTT GCATGGCAGA ATGAATTTTC	1320
TGATCTATGG TAGTAGTAAT CTTATAACCA CCATTTTCAA TTTCTTGGC TGCCAAATCT	1380
CGATAAACT TCTGAGTTGC CTCATTTTTC AACTCCTTAG CGGAGACATT GTCTCTCTGA	1440
GCTAGATAGT CATACATACG TTCTTGAGCT TCTGCCAAAG TTGTAAAGTA TAAATAGTCT	1500
CGTGAAATTC CTGTAACCGT GCCCGATGGT AAAAAGTCCT GTTTAAGGTC ATAATCCTTG	1560
TACTGAGAAT ACTCGTCTTT GCTTAATGCA CCTGTACGAT ACATACTGTA AAGAACTGCC	1620
TTAGCCCGTC TTAAGCCAAT TTCTAGGTCT TCATCACTCT TCAACTCCCC AGTATTTTCA	1680
TAAGGAGAGT AAGTAATGGG ACTCTGTGGA AGTCCTGCTA AAAATGCTGC TTGAGGAACA	1740
GTCAACTGAC TGGCATCTAC ACCGAAAATT CCCTCAGCTG CTTGCCGAGC CCCTGCAATA	1800

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TTCTGTCCCT TATTATTTCG GCCAAAGGGA GCCACATTGA GATAGGTCGT TAAAATCTCA	1860
TCTTTATTCA TGGCGCGTTC CAAGGCAAGA GCATCCACAA TCTCTGCCGC CTTACGAGCC	1920
AAGGTCGGCG CATCCCCAAC CACCTGCTGT TTAATTAGTT GCTGGGTCAA GGTGAACCC	1980
CCACTAGAGG AACCCAAACC TACAAATTTC CCCAAGGTCG CACGAATCAC CGCCTTGGGT	2040
ACTACACCCT TATGTTCTTT AAAGTGTTC TCTTCTGTCG CAATGATAGC CTTCTTCAGA	2100
TTTTCGAAA TTTGCTCAGA TGAGATAGAA GTGCGCAACA AATCACTCTC TATGGAAGCA	2160
ATCACCGTCC CGTCCGAATA GGTAATCTCT GAAATAGAAG AGATGTCTT GACCTGATTC	2220
ACCAATTCTT CTGTCTGAGG CACCCGAACC TTGTCAAATA AGGCCACTCC GTATCCCAA	2280
GCAATCCCAG CTCCCAACAT TCCTCCTAGA AAACCGAGTA CAAAGAGTAA GTTAAATAAG	2340
GCTTTTATAC TCAGTAAAT AGCTGGGAAA ATGACTGACT TATCTAAGGT TTTAGATTTT	2400
TTGGTACTTG AACCTTTCTT GCCAGGTCTA GCTGATTTTT TATTTTTTTG TTTTGTCTGG	2460
AAAAATTCCA GCATTTTTCG TTTTAATTCA TTTAATTGAT TTTGCATGGA TTTCTCACT	2520
TTATCTATTA TACCACAAA GGGAAATTTT CAATAAAATA GCCACTTTCT TCCCTATTCT	2580
GCTAGGCTAT TGCCCAAGTT TGTGATACAA TAGGTAGAAA CAATAATTTT AAAAAGGAGA	2640
AAAAACACAT GCACATTTT GATGAGCTAA AAGAGCGTGG TTTGATATTT CAAACGACTG	2700
ATGAAGAAGC TTGCGTAAA GCCCTAGAAG AAGGTCAAGT TTCTTATTAT ACTGGCTACG	2760
ATCCAACGTC TGACAGCCTT CACCTAGGCC ACCTTGTCGC AATCTTGACA AGTCGTCGCT	2820
TGCAACTAGC AGGTCACAAA CCTTATGCGC TCGTTGGCGG TGCTACAGGT CTCATCGGAG	2880
ATCCGTCCTT CAAAGATGCT GAACGTAGTC TCCAAACAAA AGACACAGTA GATGGCTGGG	2940
TCAAGTCTAT CCAAGGACAA CTTTCTCGTT TTCTTGACTT TGAAATGGC GAAAACAAGG	3000
CTGTCATGGT CAACAACACT GACTGGTTTG GCAGCATCAG CTTCAATTGAC TTCCTCCGTG	3060
ATATTGAAA ATACTTCACG GTCAACTACA TGATGAGTAA GGAATCTGTT AAAAAACGGA	3120
TCGAAACAGG AATTTCTTAC ACTGAGTTCG CTTACCAAAT CATGCAAGGG TATGACTTCT	3180
TCGTCCTTAA CCAAGACCAT AATGTCACTC TTCAAATCGG TGGTTCTGAC CAGTGGGGAA	3240
ATATGACAGC TGGTACCGAA TTGCTTCGTC GTAAGGCGGA CAAGACTGGT CACGTTATCA	3300
CTGTTCCACT AATCACAGAT GCAACTGGTA AGAAATTTGG TAAATCAGAA GGAAATGCCG	3360
TCTGGCTCAA TCCCGAAAAG ACTTCTCCAT ACGAAATGTA CCAATTCTGG ATGAACGTGA	3420
TGGACGCTGA CGCTGTTGCG TTCTTGAAAA TCTTTACTTT CTTGTCACCT GATGAGATTG	3480
AAGATATTG TAAACAATTT GAAGCAGCGC CACACGAACG CTTGGCTCAA AAAGTCTTGG	3540
CTCGTGAAGT TGTTACACTT GTTCACGGAG AAGAAGCCTA CAAAGAAGCA CTTAACATCA	3600

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CTGAGCAACT CTTTGCAGGA AACATCAAAA ACCTTTCTGT CAAAGAGCTC AAACAAGGAC	3660
TTCGTGGTGT GCCCAACTAC CAAGTACAGG CAGACGAAAA CAACAATATC GTGGAAGTGC	3720
TCGTCTCATC TGGTATAGTT AACTCAAAAC GCCAAGCCCG TGAAGACGTC CAAAACGGAG	3780
CCATCTACGT AAACGGCGAC CGCATCCAAG AGCTTGACTA TGTCTTGAGT GACGCTGATA	3840
AGTTAGAGAA TGAAGTACT GTTATCCGTC GTGGAAGAA AAAATACTTT GTATTGACTT	3900
ACTAAACTAT TCAACATTTA TCTATAAACA AAGGAGTTAA CCTCGAGAAA GGTAACCTCT	3960
TTTTGCTGTT AATAACTCTC ATCTATCTAT TTTTAATAGA CAGGCTACGC AGGACAATGC	4020
GCAAGGTTGT TAGATTATGT AAGATAGAGA GATTGAAGG ACTGAACCAA TTAAATAAGC	4080
CAAAGCCAAT CAAACTACTA TTTACGACAA CGGTATCCTG AATATTTTTC TTGATGAGTG	4140
TTTGCAAAGA TGATGATAAC GAATCCAACCT CTGGAAGAA ATCCAAACGA TTATCTAACA	4200
ATAAGATATC ACTCATCTGC TTAGAAATAT CTGCACTCTC ATTCATCACC ACACCGATAT	4260
CTGATAGAGT TAAAGCCGCT GAGTCATTCA ATCCATCTCC AACCATCAAA ATAGTGTGAC	4320
CTGCTTTCTG CAGTTTCTCT ACTAACTCAA ATTTCCCATC AGGTTTCAAG TCTGTATAGA	4380
CCTGATCAAA GGGCAAATCT TTGACTAATT CCTCTGTCCT AATCAAGGTG TCTCCTGTTG	4440
CCAGAATCAA TTTTTCCTCC TGTGCCTTAA GTTTATCCAA GGCTGTTTTT GCTTCTTTTC	4500
TCAAAGGAGT ATGAATGCAG AACATTCCAA TCAATTCATT TTGATAAGCC AAGAATAAGA	4560
GATTGTAGTG ACTCTGTAC TCTCAATTA AAGCATTTTG TTCTGAACTG ATATGAATCT	4620
GCTCATCCTG CATCAAGACA TAATTCCTCA TAAGAACTGG TTGGCCATCT ATATGAGATT	4680
TGATCCCTT GCTTGCGATA TATTGGAGTT TCCCATGCAT TTCCTCATGT TCAATTCCTT	4740
CTATCTCAGC TTGCTTGACG ATGGCATTAG CAATAGGATG ATAAATGTGT TCCTCAAGAC	4800
AGGCACTGAT TCTGAGAATA TCTTCCTCAC TATAGTCTCC AAAAGGTAAC ACCTTTTCAA	4860
CTATAGGATA ACTAGTTGTG ATTGTTCTCT TCTTATCAAA CAAGAAAGTA TCAACTTCCA	4920
GATATTTCTC CCTGTTGTGG CCTCTGGCTG TCATCTCTGT GCTGG	4965

(2) INFORMATION FOR SEQ ID NO: 144:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 3232 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 144:

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CAGGGGCGTA TTACGTGACA ATTCAATGTA GGCTGTCGCT ACTTGCGCCA AAACAAGGAT	60
TCGATAATGT CGGATGATAC TAACGATTAA ACCGAGCAGA AAGGATCCCA AAATCCCCA	120
AACTGCAATA TGCAAGGTCA GAAAGAATGC CTTTTGATAT AGTGGTAGAT ATTGTTCAAC	180
AATGGATCAA TCCAAAAATA GAACCTCCCA TCTAGAAATA ATACAGTTAT TGTAGCACTT	240
AAAATCTTCT TTGGATAATA TCTATTTTTT ATTGCCGTTA TAAGGATTTT TATCATAGAC	300
ATAAAATTTT TGAAATTTCC AAACAAAATA TTTTAAAAGT TTTGAAAAAG AGTTAAGATA	360
TTTTTGTAAT ACACAAAGTA AACGCTTACT TATTAAGGAG GACATTTTAT GTCATACAAA	420
ACAAGCAATG CAGAAGGTCA TGTAGATTTC ATCAATACCT ATGATTGGA GCCAATGGCG	480
CAACAAGTTA TTCCTAAAGC AGCATTGGC TATATCGCTA GTGGGGCGGG AGATACTTTC	540
ACTTCTTTCC AGTGATTTTA GCGTCAGGT CTTTTTAGTT TTTAAAGATT ATCCGTGAAT	600
TTCTTGCTTA TTTATGATAA AATGGGAGTG TCGCAAAAAA TGACTCATCG TATTCAATTT	660
TGAGTAAAC TAGGAGGATC CCATGTCTAC AGAACATATG GAAGAACTAA ATGACCAGCA	720
GATCGTTCGC CGTGAAAAA TGGCTGCGCT CCGCGAACAA GGAATCGATC CTTTCGGAAA	780
ACGTTTGA CGTACTGCAA ATTCACAAGA ATTAAAAGAT AAATATGCCA ACCTCGATAA	840
AGAACAATTA CACGATAAAA ACGAAACAGC TACTATCGCA GGACGCTTGA TAACCAAACG	900
TGGTAAAGGA AAAGTTGGTT TTGCCACCT TCAAGACCGG GAAGGCCAGA TTCAGATCTA	960
CGTTCGTAAG GATGCTGTCG GTGAAGAAAA CTACGAAATC TTCAAAAAG CAGACCTTGG	1020
TGACTTCCTT GGTGTCGAAG GTGAAGTGAT GCGTACGGAT ATGGGAGAAC TCTCTATCAA	1080
GGCAACCCAC ATCACACACT TGTCTAAGGC TCTTCGTCCT CTTCTGAGA AATTCCATGG	1140
TTTGACAGAC GTTGAAACAA TTTACCGTAA ACGTTACCTT GACTTGATTT CTAATCGTGA	1200
AAGCTTTGAA CGCTTTGTCA CTCGTTCAAA AATCATCTCT GAAATCCGTC GTTACCTTGA	1260
CCAAAAAGGA TTCCTTGAAG TGGAAACACC TGTCTTTCAT AATGAAGCCG GTGGTGCTGC	1320
TGCCCGTCCA TTTATCACCC ACCACAATGC CCAAAACATT GACATGGTGC TTCGTATCGC	1380
GACTGAGCTT CACTTAAAC GCCTTATCGT GGGTGGTATG GAACGTGTCT ATGAAATTGG	1440
CCGTATCTTC CGTAACGAAG GAATGGACGC TACTCATAAC CCTGAGTTCA CTTCTATCGA	1500
AGTTTACCAA GCTTATGCAG ACTTCCAAGA CATCATGGAC TTGACTGAAG GCATTATCCA	1560
ACACGCTGCT AAATCAGTCA AAGGTGATGG CCCAGTCAAC TACCAAGGTA CTGAAATCAA	1620
GATTAAACGAA CCATTTAAGC GTGTTTCATAT GGTGGATGCT ATCAGAGAAA TTAAGTGGT	1680
CGATTTCTGG CAAGACATGA CTTTGGAAGA AGCTAAAGCT ATCGCTGCTG AGAAGAAAGT	1740
TCCAGTTGAG AAACACTACA CTGAGGTTGG TCACATCATC AATGCCTTCT TTGAAGAGTT	1800

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TGTTGAAGAA ACTTTAATCC AACCAACCTT TGTCTATGGA CATCCAGTAG CTGTATCTCC	1860
ACTCGCTAAG AAAAATCCTG AAGACCAACG CTTTACTGAC CGTTTCGAGC TCTTTATCAT	1920
GACTAAGGAG TACGGTAATG CCTTTACTGA GTTGAACGAC CCAATCGACC AACTTAGCCG	1980
TTTGAAGCC CAAGCTAAAG CCAAAGAACT TGGTGATGAT GAAGCGACAG GAATCGACTA	2040
TGACTACATT GAAGCTCTTG AATACGGTAT GCCACCAACA GGTGGTTTGG GAATCGGTAT	2100
CGACCGTCTC TGCATGCTCC TCACTGATAC AACAACTATC CGTGATGTAT TGCTCTTCCC	2160
AACAATGAAA TAAATTCTTA TCCTCTGGGT CTTATCAGAG GATTTTTTGA TTCAAAAAGA	2220
GACTGAATTT AAGGAGAAAA TGAAGTGTAG TATATGAAA TTGAAATAGT ACACCTTGAT	2280
TTCTAAGACA TTGTTAGAAA TTGGTTTAAA TTCCCTAAGC AATTGTGCA TGTMTTATTT	2340
CATTTTACGA TAGTACGCTG AAACCTTTCA AAAAGTACTA GAAATTGACT TGGATTCCCC	2400
AATTGATTG TTCAGATTCA CTATAAATAA AAAATTAATA AGTGGGATAG GAAGTTAGCG	2460
TCAACTAGGA TAGTATCTTG CTTAAACAGT ATATATGGGA TTGATATAAG TCCATAGGTC	2520
CTATTAGAGG ATGTTCTGGT GTCTTATTCA CTTGTTTTTT ATAGTATTAG TAGATAGAAT	2580
CAGCAAATAA AAACCCAAAT CATTCAATACC TCTCTCAACT AGATGTAAC TACAAAACCC	2640
CTGACCTCAT GAGCCACTTT CTTCTCCTC ATGAGGTCAG TTTTACTTTC TGCTGTTCCA	2700
GTATCGTTTT TCCTCGCTAG ATTTCTCTCA AAGGGCAGAC TCCTCCCTTG GTGCGTCACA	2760
CGATTTTTTC ATCTCGACTG TTCTTTAATG CATCATTAAC GACGCTTTTC TTCTAGGTGG	2820
TTCATAAGGA ACAGGAAGAT TCAGGTTGAC TTTTCTAATC CTAGAATAAA GTGCTGAAAA	2880
CAATTCGGA TAGGCATAGA GACTAGACAA TTTGAGGAGC TGCTTGCCTC CTGTTCGAAC	2940
ACATTTTCCC ACCACGTGAA GAAAAAGATG GCGGAAGCGT TTGATTGTTA AAGTTTGGA	3000
GTCACCTCCA GCTAGATGTT TGAGAAAAAG ATAGAGATTG TAGGCGATAC AGCTCATCAT	3060
CATACGAAC TCGTTTTTGA TTAAGGTGA ACTATCCGTT TTATCGCCAA AAAATCCCTC	3120
CTTCATCTCC TTGATGAAAT TCTCGGCTTG ACCACGTCCA CGATAAAGCT GAACTGGTC	3180
TTGGCTTGTT CCACTCGTCA TATTTGTAAC GAGAGAAATA ACATCGTAGA AC	3232

(2) INFORMATION FOR SEQ ID NO: 145:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10711 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 145:

CCGGAGAAAA TGATGAAAAG TTCAAACTA TTTGCCCTTG CGGGCGTGAC ATTATTGGCG	60
GCGACTACTT TAGCTGCAATG CTCTGGATCA GGTTCAGCA CTAAAGGTGA GAAGACATTC	120
TCATACATTT ATGAGACAGA CCTGATAAC CTCAACTATT TGACAACTGC TAAGGCTGCG	180
ACACAAATAT TACCAGTAAC GTGGTTGATG GTTTGCTAGA AAATGATCGC TACGGGAACT	240
TTGTGCCGTC TATGGCTGAG GATTGGTCTG TATCCAAGGA TGGATTGACT TACACTTATA	300
CTATCCGTAA GGATGCAAAA TGGTATACTT CTGAAGGTGA AGAATACGCG GCAGTCAAAG	360
CTCAAGACTT TGTAACAGGA TTAAAATATG CTGCTGATAA AAAATCAGAT GCTCTTTACC	420
TTGTTCAAGA ATCAATCAAA GGGTTGGATG CCTATGTAAA AGGGGAAATC AAAGATTTCT	480
CACAAGTAGG AATTAAGGCT CTGGATGAAC AGACAGTTCA GTACACTTTG AACAAACCAG	540
AAAGCTTCTG GAATTCTAAG ACAACCATGG GTGTGCTTGC GCCAGTTAAT GAAGAGTTTT	600
TGAATTCAAA AGGAGATGAT TTTGCCAAAG CTACGGATCC AAGTAGTCTC TTGTATAACG	660
GTCCTTATTT GTTGAAATCC ATGTGTACCA AATCCTCTGT TGAATTTGCG AAAAATCCGA	720
ACTACTGGGA TAAGGACAAT GTGCATGTTG ACAAAGTTAA ATTGTCATTC TGGGATGGTC	780
AAGATACCAG CAAACCTGCA GAAAACCTTA AAGATGGTAG CCTTACAGCA GCTCGTCTCT	840
ATCCAACAAG TGCAAGTTTC GCAGAAGTTG AGAAGAGTAT GAAGGACAAT ATTGTCTATA	900
CTCAACAAGA CTCTATTACG TATCTAGTTG GTACAAATAT TGACCGTCAG TCCTATAAAT	960
ACACATCTAA GACCAGCGAC GAACAAAAGG CATCGACTAA AAAGGCTCTC TTAAACAAGG	1020
ATTTCCGTCA GGCTATTGCC TTTGGATTTG ACCGTACAGC CTATGCCTCT CAGTTGAATG	1080
GACAACTGG AGCAAGTAAA ATCTTGCGTA ATCTCTTTGT GCCACCAACA TTTGTTCAAG	1140
CAGATGGTAA AAACCTTTGGC GATATGGTCA AAGAGAAAT TGTCACTTAT GGGGATGAAT	1200
GGAAGGATGT TAATCTTGCA GATTCTCAGG ATGGTCTTTA CAATCCAGAA AAAGCCAAGG	1260
CTGAATTTGC TAAAGCTAAA TCAGCCTTAC AAGCAGAAGG AGTCCAATTC CCAATTCATT	1320
TGGATATGCC AGTTGACCAA ACAGCACTA CAAAAGTTCA GCGCGTCCAA TCTATGAAAC	1380
AATCCTTGGA AGCAACTTTA GGAGCTGATA ATGTCATTAT TGATATTCAA CAACTACAAA	1440
AAGACGAAGT AAACAATATT ACATATTTTG CTGAAAAATGC TGCTGGCGAA GACTGGGATT	1500
TATCAGATAA TGTCGGTTGG GGTCCAGACT TTGCCGATCC ATCAACCTAC CTTGATATTA	1560
TCAAACCTTC TGTAGGAGAA AGTACTAAAA CATATTTAGG GTTTGACTCA GGGGAAGATA	1620
ATGTAGCTGC TAAAAAAGTA GGTCTATATG ACTACGAAAA ATTGGTTACT GAGGCTGGTG	1680
ATGAGACTAC AGATGTTGCT AAACGCTATG ATAAATACGC TGCAGCCCAA GCTTGGTTGA	1740

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CAGATAGTGC TTTGATTATT CCAACTACAT CTCGTACAGG GCGTCCAATC TTGTCTAAGA	1800
TGGTACCATT TACAATACCA TTTGCATTGT CAGGAAATAA AGGTACAAGT GAACCAGTCT	1860
TGTATAAATA CTTGGAACCT CAAGACAAGG CAGTCACTGT AGATGAATAC CAAAAGCTC	1920
AGGAAAAATG GATGAAAGAA AAAGAAGAGT CTAATAAAAA GGCTCAAGAA GATCTCGCAA	1980
AACATGTGAA ATAAGTGTG CAAAATATAA GAAAGGATTT AGTATTTCCC TTGAATGCTG	2040
AATCCTTTTT TACATTTGTA AAGAAAGATT CTAATATGTA CGGACCCCA AAAGTTGGAG	2100
CCTCTTTTTG TCAGAATAGA GAAAATTTT GTTAATTTTA CTTGTTTCCT ATTGCTTTCT	2160
CAGCTATTAT TTGTTATATT AAAAGTATAA TTATTTTTTA TTTATCAGAG TTAAGCATTG	2220
CACCTTCAGA GGAAGGAGTA TTTTTTAAAA AGAAAATGTA AACGTTTGCT CAAAATGAA	2280
AGGATTTAGA AGTTTATGAA TAAAGGATTA TTGAAAAAC GTTGTAATA TAGTATCGG	2340
AAATTTTCAT TAGGTGTTGC TTCTGTTATG ATTGGAGCTG CATTCTTTGG GACAAGTCCG	2400
GTTCTTCAG ATAGCGTGCA GTCTGTTTCC ACGGCGAAT TACCAGCTGA TTTAGCTACT	2460
GCTCTGCAA CAGCAAAAGA GAATGATGGG CGTGATTTTG AAGCGCTAA GGTGGGAGAA	2520
GACCAAGGTT CTCCAGAAGT TACAGATGGA CCTAAGACAG AAGAAGAACT ATTAGCACTT	2580
GAAAAAGAAA AACC GGCTGA AGAAAAACCA AAAGAGGATA AACCTGCAGC TGCTAAACCT	2640
GAAACACCTA AGACGGTAAC CCCTGAATGG CAAACGGTAG CGAATAAAGA GCAACAGGGA	2700
ACAGTCACTA TCCGAGAAGA AAAAGGTGTC CGCTACAACC AACTATCCTC AACTGCTCAA	2760
AATGATAACG CAGGCAAACC AGCCCTGTTT GAAAAGAAGG GCTTGACCGT TGATGCCAAT	2820
GGAAATGCAA CTGTTGATTT AACCTTCAA GATGATTCTG AAAAGGCAA ATCACGCTTT	2880
GGTGTCTTTT TGAAATTTAA AGATACCAAG AATAATGTTT TTGTCGGTTA TGACAAGGAT	2940
GGCTGGTTCT GGGAGTATAA ATCTCCAACA ACTAGCACTT GGTATAGAGG TAGTCGTGTT	3000
GCTGCTCCTG AAACAGGATC AACAAACCGT CTCTCTATCA CTCTCAAGTC AGACGGTCAG	3060
CTAAATGCCA GCAATAATGA TGTCAATCTC TTTGACACAG TGACTCTACC AGCTGCGGTC	3120
AATGACCATC TTAATAATGA GAAGAAGATT CTTCTCAAG CGGGCTCTTA TGACGATGAG	3180
CGAACAGTTG TTAGCGTTAA AACGGATAAC CAAGAGGGG TAAAAACAGA GGATACCCCT	3240
GCTGAAAAAG AAACAGGTCC TGAAGTTGAT GATAGCAAGG TGACTTATGA CACGATTCAG	3300
TCTAAGGTCC TCAAAGCAGT GATTGACCAA GCCTTCCCTC GTGTCAAGGA ATACAGCTTG	3360
AACGGGCATA CTTTGCCAGG ACAGGTGCAA CAGTTCAACC AAGTCTTTAT CAATAACCAC	3420
CGAATCACCC CTGAAGTCAC TTATAAGAAA ATCAATGAGA CAACAGCAGA GTAAGTGATG	3480

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AAGCTTCGCG ATGATGCTCA CTTAATCAAT GCGGAAATGA CAGTACGCTT GCAAGTTGTA	3540
GACAATCAAT TGCACCTTGA TGTGACTAAG ATTGTCAACC ACAATCAAGT CACTCCAGGT	3600
CAAAAAGATTG ATGACGAAAG CAAACTACTT TCTTCTATTA GTTTCCTCGG CAATGCTTTA	3660
GTCTCTGTTT CTAGTAATCA AACTGGTGCT AAGTTTGATG GGGCAACCAT GTCAAACAAT	3720
ACGCATGTCA GCGGAGATGA TCATATCGAT GTAACCAATC CAATGAAGGA TTTGGCTAAG	3780
GGTTACATGT ATGGATTGTG TTCTACAGAT AAGCTTGCTG CTGGTGTTTG GAGTAACTCT	3840
CAAAACAGCT ATGGTGGTGG TTCGAATGAC TGGACTCGTT TGACAGCTTA TAAAGAAACA	3900
GTCGGAAATG CCAACTATGT AGGAATCCAC AGCTCTGAAT GGCAATGGGA AAAAGCTTAT	3960
AAGGGCATTG TTTTCCAGA ATACACGAAG GAACTTCCAA GTGCTAAGGT TGTATCACT	4020
GAAGATGCCA ATGCAGACAA GAACGTTGAT TGGCAAGATG GTGCCATTGC TTATCGTAGC	4080
ATTATGAACA ATCCTCAAGG TTGGGAAAAA GTTAAGGATA TCACAGCTTA CCGTATCGCG	4140
ATGAACTTTG GTTCTCAAGC AAAAAACCA TTCTTATGA CCTTGATGG TATCAAGAAA	4200
ATCAATCTCC ATACAGATGG TCTTGGGCAA GGTGTCTCC TTAAAGGATA TGGTAGCGAA	4260
GGCCATGACT CTGGTCACTT GAACTATGCT GATATTGGTA AGCGTATCGG TGGTGTGCGAA	4320
GACTTCAAGA CCCTAATTGA GAAGGCTAAG AAATATGGAG CTCATCTAGG TATCCACGTT	4380
AACGCTTCAG AAACCTATCC TGAGTCTAAA TACTTCAATG AAAAAATTCT CCGTAAGAAT	4440
CCAGATGGAA GCTATAGCTA TGGTTGGAAC TGGCTAGATC AAGGTATCAA CATTGATGCT	4500
GCCTATGACC TAGCTCATGG TCGTTTGGCA CGTTGGGAAG ATTTGAAGAA AAAACTTGGT	4560
GACGGTCTCG ACTTTATCTA TGTGGACGTT TGGGGTAATG GTCAATCAGG TGATAACGGT	4620
GCCTGGGCTA CCCACGTTCT TGCTAAAGAA ATTAACAAAC AAGGCTGGCG CTTTGCATC	4680
GAGTGGGGCC ATGGTGGTGA GTACGACTCT ACCTTCCATC ACTGGGCAGC TGACTTGACC	4740
TACGGTGGCT ACACCAATAA AGGTATCAAC AGTGCCATCA CCCGCTTTAT CCGTAACCAC	4800
CAAAAAGATG CTTGGGTAGG GGACTIONAGA AGTTATGGTG GTGCAGCCAA CTATCCACTG	4860
CTAGGTGGCT ACAGCATGAA AGACTTTGAA GGCTGGCAGG GAAGAAGTGA CTACAATGGC	4920
TATGTAACCA ACTTATTTGC CCATGACGTC ATGACTAAGT ACTTCCAACA CTTCACTGTA	4980
AGTAAATGGG AAAATGGTAC ACCGGTGACT ATGACCGATA ACGGTAGCAC CTATAAATGG	5040
ACTCCAGAAA TGCGAGTGGA ATTGGTAGAT GCTGACAATA ATAAAGTAGT TGTAACCTCGT	5100
AAGTCAAATG ATGTCAATAG TCCACAATAT CGCGAACGTA CAGTAACGCT CAACGGACGT	5160
GTCATCCAAG ATGGTTCAGC TTACTTGACT CCTTGGAAC TGGATGCAAA TGGTAAGAAA	5220
CTTCTACTG ATAAGGAAAA GATGTACTAC TTCAATACGC AGGCCGGTGC AACAACTTGG	5280

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ACCCCTTCCAA GCGATTGGGC AAAGAGCAAG GTTTACCTTT ACAAGCTAAC TGACCAAGGT	5340
AAGACAGAAG AGCAAGAAGT AACTGTAAAA GATGGTAAAA TTACCCTAGA TCTTCTAGCA	5400
AATCAACCAT ACGTTCTCTA TCGTTCGAAA CAACTAATC CTGAAATGTC ATGGAGTGAA	5460
GGCATGCACA TCTATGACCA AGGATTTAAT AGCGGTACCT TGAAACATG GACCATTTC	5520
GGCGATGCTT CTAAGGCAGA AATTGTCAAG TCTCAAGGGG CAAACGATAT GCTTCGTATT	5580
CAAGGAAACA AAGAAAAAGT TAGTCTCACT CAGAAATTAA CTGGCTTGAA ACCAAATACC	5640
AAGTATGCCG TTTATGTTGG TGTAGATAAC CGTAGTAATG CCAAGGCAAG TATCACTGTG	5700
AATACTGGTG AAAAAGAAGT GACTACTTAT ACCAATAAGT CTCTCGCGCT CAACTATGTT	5760
AAGGCCTACG CCCACAATAC ACGTCGTGAC AATGCTACAG TTGACGATAC AAGTTACTTC	5820
CAAAACATGT ACGCCTTCTT TACAACGGG GCGGACGTCT CAAATGTTAC TCTGACATTG	5880
AGTCGTGAAG CTGGTGATCA AGCAACTTAC TTTGATGAAA TTCGTACCTT TGAAAACAAT	5940
TCAAGCATGT ACGGAGACAA GCATGATACA GGTAAAGGCA CCTTCAAGCA AGACTTTGAA	6000
AATGTTGCTC AGGGTATCTT CCCATTGTGA GTGGGTGGTG TCGAAGGTGT TGAAGATAAC	6060
CGCACTCACT TGTCTGAAAA ACACAATCCA TATACACAAC GTGGTTGGAA TGGAAGAAA	6120
GTCGATGATG TTATCGAAGG AAATGGTCA CTCAAGACAA ATGGACTAGT GAGCCGTCGT	6180
AACTTGGTTT ACCAAACCAT CCCACAAAAC TTCCGTTTGG AAGCAGGTAA GACCTACCGT	6240
GTAACCTTTG AATACGAAGC AGGATCAGAC AATACCTATG CTTTGTAGT CGGTAAGGGA	6300
GAATTCAGT CAGGTCGTCG TGGTACTCAA GCAAGCAACT TGGAAATGCA TGAATTGCCA	6360
AATACTTGGA CAGATTCTAA GAAAGCCAAG AAGGCAACCT TCCTTGTGAC AGGTGCAGAA	6420
ACAGGCGATA CTTGGGTAGG TATCTACTCA ACTGGAAATG CAAGTAATAC TCGTGGTGAT	6480
TCTGGTGGAA ATGCCAACTT CCGTGGTTAT AACGACTTCA TGATGGATAA TCTTCAAATC	6540
GAAGAAATTA CCCTAACAGG TAAGATGTTG ACAGAAAATG CTCTGAAGAA CTACTTGCCA	6600
ACGGTTGCCA TGAATACTA CACCAAAGAG TCTATGGATG CTTTGAAAGA GGCGGTCTTT	6660
AACCTCAGTC AGGCCGATGA TGATATCAGT GTGGAAGAAG CGCGTGCAGA GATTGCCAAG	6720
ATTGAAGCTT TGAAGAATGC TTTGGTTCAG AAGAAGACGG CTTTGGTAGC AGATGACTTT	6780
GCAAGTCTTA CAGCTCCTGC TCAGGCTCAA GAAGGTCTTG CAAATGCCTT TGATGGCAAT	6840
GTGTCTAGTC TATGGCATAC ATCTTGGAAAT GGTGGAGATG TAGGCAAGCC TGCAACTATG	6900
GTCTTGAAAG AACCAACTGA AATCACAGGA CTTGCTATG TTCCGCGTGG ATCAGGTTCA	6960
AATGGTAACT TGCGAGATGT GAACTTGTT GTGACAGATG AGTCTGGCAA GGAGCATACC	7020

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TTTACTGCAA CTGATTGGCC AAATAACAAC AAACCAAAAG ATATTGACTT TGGTAAGACA	7080
ATCAAGGCTA AGAAAATTGT CCTTACTGGT ACCAAGACAT ACGGAGATGG TGGAGATAAA	7140
TACCAATCTG CAGCGGAACT TATCTTTACT CGTCCACAGG TAGCAGAAAC ACCTCTTGAC	7200
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GAGGAAGTAG CTAGCGTTCA GGCAAGCATG AAATATGCCA CGGATAACCA TCTCTTGACG	7320
GAAAGAATGG TGGAATACTT TGCAGATTAT CTCAACCAAT TAAAAGATTC TGCTACGAAA	7380
CCAGATGCTC CAACTGTAGA GAAACCTGAG TTTAACTTA GATCTTTAGC TTCCGAGCAA	7440
GGTAAGACGC CAGATTATAA GCAAGAAATA GCTAGACCAG AAACACCTGA ACAAATCTTG	7500
CCAGCAACAG GTGAGAGTCA ATCTGACACA GCCCTCATCC TAGCAAGTGT TAGTCTAGCC	7560
CTATCTGCTC TCTTTGTAGT AAAACGAAG AAAGACTAGT ATTTAGTAAA ACCTCTTAAC	7620
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CACTAAAGAC GACTTTATGG ATATACATTG GTTTATAGTA AGTTCCACCA TTTGCAAAGG	8460
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TGTTACTTGA AATGGCATTT GAGTAGTGAA TACTTGGGTA GTCGATTCCT AGACCATTTA	8580
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GCGATTGTTG CAGGGCGTAT TGCAAGGTGA TGTGCGCAA GTAGCCCCTA TCCCAGTTAT	8700
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AATCGTAGAC ACCGTACTCC AAGGCAGGAG CATAGTCTGT GATCGGTTTC ATAGTTGATC	8820

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CCCAGTCGCG GTTGTGTTCT ACTGCTTGGT TAATTCCGAA GGAAACATTA CTTGACTGAT	8880
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AGCCTGTTTC TTCTTCAACT TGATTGATGA CTTCTTGAG GTAATTATCC ATGTAAGCAG	9120
GGTAATTACT TGCTGATTG AGACTTTGTA GTCCATCAGT AATTGGTGTA TTGACTGCTT	9180
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CTCCCAGGAT ACGGATGGTA TCAATCCCC TGTGGTCGAA GAAGCGATGG TCTTCGATAG	9660
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TCGTTGTGGA TAGTCCACTT GTACGATTG AATAGGAGTT GGTTCCTTAT GTATAACAGC	10380
CAAGCCCTGA GACAAATAGT AGTCGTTGGT AGCATTGATC ATCTTTTCAA AGGGTACCGA	10440
GCTCGAATTC GTAATCATGT CATAGCTGTT TCCTGTGTGA AATTGTTATC CGCTCACAAT	10500
TCCACACAAC ATACGAGCCG GAAGCATAAA GTGTAAAGCC TGGGGTGCCT AATGAGTGAG	10560

978

CTAACTCACA TTAATTGCGT TCGCTCACT GCCCGCTTTC CAGTCGGGAA ACCTGTCGTG	10620
CCAGCTGCAT TAATGAATCG GCCAACGCGC GGGGAGAGGC GGTTCGCGTA TTGGGCGCTC	10680
TTCCGCTTCC TCGCTCACTG ACTCGCTGCG C	10711

(2) INFORMATION FOR SEQ ID NO: 146:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 11887 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 146:

TACATTCATT CCATCGGCTA CTCCATAATA CTTAGATAAA ACCATAGCTG AAGTCGAATA	60
CGGATACTGT AAAGTATTAT CAATTTTAAT CAAATCATCA TTACCGATAA TACTTCTGAT	120
TGCTTTTGGT AGTATGAACC ATACGTTGGT GAAATCTCAG ATAATGAAGA ATCATTAGAC	180
TCTGGACCTT TTTCTAGTGT CTCACCTACC TCATATTCTT CACCCCTACT AGAAATAACA	240
CTCAAAGCAG ATACTGTCGA TAACTGGCTA GCCAATAAAG TACTCGCAAT AATTGAAATA	300
CCCAATTTT TATAAACAGT TTTCTTCATT ATTGTATCCT CCTAATGTAA TTATAGCGTA	360
CTATTCTAAA TTTCTTAATC TACTATAGAA TCAAGAAATC TACCACCTTC TTAAATACC	420
CTCCATTATC ACATAAACAG GTAAACTTTT CAATTAATGA CTGCGCTTTT CAATCACGCT	480
AGAGGTACTT GCTTGCTTCT TTGATACTAA GTTCAGCCAT TCTTTCCTTG TTTTCTCAA	540
TAAAGCATGT TACCCAAGTG GGATTCGTTT TGGAGTAGTC TCGCAGAGTC CAGCCAATGG	600
CTTTATTGAT AAAAAATCTT GTTTGGTTCA AGTTATGAAG GAGAATCTTT TCCATTAATT	660
GAGTATTGGT CTTCTCTTTT CTTAACAAC TGGTGGTCAAT AGCGACACGT CTCAGCCAGA	720
TATTATCTGA TAGGCTCCAT TTTATACTCA ATGAAATCA AAGAGCAAAC TAGGAAGCTA	780
GCCGCAGTTG CTCAAAACAC TGTTTTGAGG TTGCAGATAG AGCTGACGTG GTTTGAAGAG	840
ATTTTCGAAG AGTATTAAGA TTATTTCTTC TAGTTCAGGG TGTTCATACA CCAAACCTCCC	900
TACTACTCGA TCTAGGATAT CTACCGTGTC CCACAAGGAT TTGTTCACGA CTAACCTGCTC	960
TAGCTTAGGC AAATCGGTTT CCTTTAGATA AGACTGCATT GCTTTCAAAT AGTTAGCAGC	1020
CACATATTGG TATTTCTAG GATCCTTTTC CCAGCAAGTG TCTGCAAAAT CCCAATCGAT	1080
AATCTTTGTT TTTTTCGCTT CTGGAAAATA TTTTATAGAG TTTATTTCTT TCAGGCACCG	1140
CAATACCTAG AAAAGAAAAT TGATGGCGCA TATAGGCTTC CATGGACCTT GCTTTTTTAG	1200
AGTCTTTTGC TGCTTCTAGC TCCTCAAGTA AATCTGCTAA ACTCATCTAA AACTCCTCTT	1260

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CTGCGATGCG CTGATTTTCG TAGCCCTTGG CGATGAGTTG GAGAACATCT CGCTCACGCG	1440
CAGTCAATTC TTCATGAAGT TCCATATGAT TGCGGTGGTA TTCAACCTTC TTGCTAACCT	1500
CTTGCTCAAT GGCCAGCTCG CCAGCAGCTA CCTTACTGAC GGCATGAAGC AATTCATCTG	1560
CACTAGAAGT CTTGAGCATA TAGCCTTTGG CACCAGCATC TAAGACTGGC ATGATTTTTT	1620
CATTGTCCAA ATAAGAGGTC ACAATCAAAA TCTTGGCTTC AGGCCATTCT TTAAGGATTG	1680
CTAAGGTGCG GTCAATCCCA TTCATCTCAG GCATGACAAT ATCCATGACA ATGACATCTG	1740
GACGCAGTTC CAAGGCCAAG TCAATCCCTT GAGACCCGTT GGACGCCTCA CCCACAACCT	1800
CTACATCGTC TTGGAGGTCA AAGTAGCTTT TCAAGCCCAA TCGGACCATT TCATGGTCAT	1860
CTACTAGTAA AATTTTCATC TTTACTCCTT TATCATTCCT TATCTAACAG GGAATACGG	1920
ATATCAACCG CCAGCCCTTG CTTGGGAGCT GTCAAGAGTT GAACTGTTCC AGCCATATCT	1980
TCAACCCGCT CCTTGATATT TCGCAGTCCA TAACTCAAGT CGTCTAAGCT CCCTAACTGG	2040
AAACCAATCC CATTTGCCAC CACCTTCAGT TGCAATTCAA CATCTGTCTG ATAGAGGTAG	2100
ACATCTAGGC AAGATGCCTG GGCATGGCGG AGGGTATTGC TAATCAACTC TTGCAGGATA	2160
CGGAAGATAT GCTCCTCGAT TTTCTTAGGC AATTTCTGCA TATTCTGCTT GAGACTAACC	2220
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TCTTGTTACT CTTGAGATAG TCTTTTGTTC CTTGATGATA GTGTTTCATTG CGGAGGGCTC	3000

980

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TGTCATGATT GGTAAAGATG ACCCTCTCCA GATGAATAGT GTCCTTGCCC ATGAAGCGAA	3180
AGAGATTGAT ATCATCGAAT TGGCAAGTCT GGTAGCTTGA AAAATGATGA AGATTTCCAA	3240
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CTTTTTCCTG GTTCATCATC GGGTAAAGAA GAAAGAGGCT ATAGATAACC GCAACAAAAA	3360
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CTAAAAGAAG ATTATTTCCT TCTTTACCAG TGTAGTAGCG AATCAAAAGC AAAAAGAGGA	3480
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GGAACCATTG TCTCCTCGCT TAAGCAAGAC AGCGCTAGTC AGCTTGAACA AGAGCTCCTG	5280
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TTCAACATCT TAAACAGTCG CTGGCTGTGC TCCTGAGGTT AAAAGATACC GTCATACTAC	10140
TGTTTCTGAC GACCAGTATG ATTGCCATCT TGGATGTGTC CCCTCGGCTG ATTGCCCTCC	10200
GCTTCATCCA ACAGACACTA GCACAACTGA GCATTGGGCA ACTCCTCGCC CTGCTCTCCA	10260
TCATCATGTC TTGTGGAGCT ATCCTTGGA ATATGACCAG CAGTAATCTA TTTAAAAATA	10320
TCCGTTTCAC GCACCTCTTG GTTTTCTGTG AGATTTCCTT ATTGACTCTA ATAACTAGTA	10380
TCCTTTGTCA AGCCTATATC GTAATTTTCA TGACCAGTTT CATCAGTTCT ACGATTATCG	10440
GCATTCTCAG CCCTCGCCTA CAAGCAGCTG TCTTTGCCA TATCCCCAGT GACAAGATGG	10500
GGACGGTGGG CTCTGCTCTG AGCACAGTGG ACATTCTCGC CCCGTCCCTG CTCTCCCTAT	10560
TAGCCCTATC CATAGCATCG GCGGTTTCGG TGCAGTTAGC ATTGATATTT TTGTATCTTA	10620
TTTAAATTGC TCTTATCTTT TGTCAATGGT TAGTCAAGTT CAACACTCAT AACTAACGAA	10680
AAAGCATGTG TAGATTTTAC ATGCTTTTAA TCTCCCCAAT CGTCAGGTCA AGTACAACAA	10740
AGTCACCTCT TTGATTAAGC GAGTGTCTA ATATAATTAT AAGCGCCCTG TCATTACCGA	10800
ACCCATTTCG CATTATAGTT GACAGAATAG CCATCTACGG TCGTATTAC TGCCAAAGCA	10860
CCTGAGCTAT AAGCATAGTA CCAGTTGCCA TTGACCTGGA ACCAACCTGT CTTCATGTCT	10920
CCATTACCTG CATTTAGGTA GTACCAAGTT GAACCATCTT GATACCAACC AGTTGCCATA	10980
GCTCCTGATG AACGGAGATA GTACCATTTG TTCCCAAGGT TTTGCCAACC TGTTTTTATA	11040
TCGCCATTTG GGTGGTCTAA ATAATACCAA GTGGTACCTT CCTGATACCA GCCAGTGGCC	11100
ATTGCTCCTG AGGAACGGAG GTAGTACCAC TTATTACCTA GATATTGCCA ACCTGTTTGC	11160
ATAATACCAG TTGTTGGATC TAGGTAGTAC CAAGTCAAT CATCGTTTAT CCACCCCGCA	11220
CGTCTTTTAC CACCAAGGTA GTTTTCTCCA TTAATTTCCG TCTTAGCTAG ATAATACCAG	11280
TTAGACTGAT CATAAAGCCA ACCTGTCTCT AAAGAATGAT TTTGATTAAA GTAATAGTTC	11340
GTATAATAAC GCTTCTCTTC TTTATCTTCT GAATCTTCAC GTTTTCCCC GTACTTTCTT	11400
CCAACACTGT CTTTAGTTTT AATCTCTAAT GTTTTCCAAC CAACAACTC TTGTAGCACT	11460
CCATTTTTAT CGAAGTAGTA CCACTCTGAC TTTGGAAAAC CTTCTAATCT GATACCATTT	11520
GGGTAAGGAC CAATTGTACT ACCTTTAGAT GGAAACGGGA TATATTGCCA GCCGACAACC	11580
ATCTCTCCAG ATAGAGAATC AAAATAATAG TACTTACCAT CAATCACTCG CCAGTAGGTT	11640
TCTTTGAGGT CCCCCTTTTT GTAGTAGGTT CTTCCGTTTT CTTGGACAAA CTGCCATCCT	11700
TCAGAATCAT CTGCAAATAC TGTACTGGTC CCTAGCAAAC CAAAGAAAAA TACTGTCACT	11760
CCAACCTGCA TAGTTTTTTT CAAAATTTTC ATCTATATAC CCTCCAATAT TAAATCCACT	11820
CACCAGATGA GGCGAAATTA TAACTTTTAC CATCGATAGT TTGGCTACCT GTAACCATTG	11880

985

CTCCAGG

11887

(2) INFORMATION FOR SEQ ID NO: 147:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11340 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 147:

CCGGTATGTT CTGGAATACT ACCAATCTAA GCTGGCTGTG CCCTACAGTT TTACAACCCCT	60
GTACGAATAC CTTAAGGAAT ATGACCGATT TTTCAGCTGG GTTTTGGAGT CTGGTATTTC	120
AAACGCTGAT AAAATATCCG ATATTCCTTT ATCAGTTTTC GAAAATATGT CTAAGAAAGA	180
CATGGAATCC TTTATCCTTT ATCTACGTGA ACGTCCCTTG CTGAATGCTA ATACAACAAA	240
ACAAGGTGTT TCACAGACAA CTATCAATCG AACCTTATCA GCACTTTCTA GTCTTTACAA	300
GTATCTAACC GAGGAGGTG AAAACGATCA GGGGGAACCT TATTTCTATC GTAATGTAAT	360
GAAAAAAGTT TCCACCAAGA AAAAGAAAGA AACCTTGCT GCCAGAGCTG AAAATATCAA	420
GCAAAAATC TTTCTAGGTG ATGAAACAGA AGGTTTCTA ACTTATATCG ATCAAGAGCA	480
CCCACAACAG CTTTCAAATC GAGCTCTCTC ATCATTCAAC AAAAATAAAG AACGAGATTT	540
AGCCATTATT GCCCTTCTCT TGGCATCTGG TGTTCGCTTA TCTGAAGCTG TTAATCTAGA	600
TCTAAGAGAT CTCAATCTAA AAATGATGGT TATTGATGTT ACTCGAAAAG GTTGCAAACG	660
TGACTCAGTC AATGTCGCTG CTTTTCGCTAA ACCTTATTTA GAGAATTATC TGGCCATTCG	720
GAATCAACGC TATAAAACGG AAAAAACAGA TACAGCCCTT TTTTAACTC TCTACAGAGG	780
TGTTCCTAAT CGTATCGATG CTTCTAGCGT TGAGAAAATG GTTGCTAAAT ACTCAGAGGA	840
TTTTAAAGTG CGTGTAACAC CCCATAAACT GCGCCATACA CTAGCAACTA GGCTCTATGA	900
TGCGACTAAA TCACAAGTTT TAGTCAGTCA CCAACTAGGA CATGCTAGCA CACAAGTCAC	960
TGACCTCTAT ACCCATATTG TTAGTGATGA ACAAAGAAT GCTCTGGATA GTTTATGATT	1020
TTACGTATTT TAAATTATGT AAATAAATAT CAAAAAAGA AGTTGGCCAA CTTCTTTTTC	1080
ATTTATCCAA CTACCGCTTC AGCGATTCTC TCACGGCTAA TACCAGCGAA GTAGCGGTG	1140
ATATCAATGG TTTTTCAGCG CTTAAGAACA TCTTCGCGTT CGTATTTTAC CCCACGAAGG	1200
ACATCTTCTA CTGCAGCAAC GTCTTCAATA CCAAAGAAGT CACCATAAAT CTTGATGTCT	1260
TGGATTTTTC ATTCAAGTAA GTTAGCAAAG ACTTCAACCT TACCACTAGT GAATTTGATT	1320

986

CCACGACGGA CGTTAAATTC AGGTGATTTA CCATAGTTCC AGTCCCAAGT TCCAACTTA	1380
GTATCCTTGA TGCATTGAT TTCGGCCAAT TCTTCTTCTG AAAAGACGTA TTCAGTCATC	1440
TCTGGGTA CTCTTTTCAT GTATTCCAAG AGTAAATCAC GGAATTTTTC GACTGTGATT	1500
TTTTTTGGTA ATTCATTGAT AATATTGGTT ACACGGGCAC GGACGGATT CACACCTTTT	1560
GATTCAAATT TATCTTTTGA AACCTTAAGG GCATTTGCGA GGACTGACAA ATCAACGTCA	1620
AAGAGCAAGC AACCGTGGTG CATGATACGG CCGTTGATAT AGGCTTGGGC ATTGCCACAG	1680
AACCTCTTAC CATCAATCTC AAGGTCATTA CGACCTGTGA ACTCAGCTTT AACCCCAAGT	1740
TGAGCCAGGG TATTGATAAC CGGAGTTGAG AAGCTCTTGA AGTCAAATGC CTTATTTTCA	1800
TCTTCTTTGG AGATGATCGT GTAGTTGAGG TTATTTAAAT CGTGGTAAAC AGCTCCACCA	1860
CCACTAATAC GGCGAACTAC CTCAATACCA TTTTCGCGAA CATAATCACG GTTGATTTCT	1920
TCGATAGTGT TCTGGTGACG ACCAACAATG ATAGATGGCT TGTTAATCCA AAGTAGGAAG	1980
ATTTGATCCT CATCCAAAAG GTGTTTAAAG GCGTATTCTT CCAAGGCAAT ATTTAAAGCA	2040
GTGTCATTG AATGATTGAT AATGTATTTT ATGATATCCC TTTACTTTAT ATGATAGAAA	2100
CTGGAAATAA CCTTCCAGTC TAATCTATCT TCGTTTTATT TTTTCTTAGG TGAATGGATG	2160
GCCATTCCTA GAACATCTGC AAACGCTTCG TACATCACTT CAGAGTAAGT TGGGTGCCCC	2220
TGGATGGTCT TCAGCATTTT CTCAACAGTG ATTTCCATTT CGATGATGCT TGATGCTTCG	2280
TTTATTAATT CTGCGGCTGC AGGACCAATA ATGTGTACAC CAAGGATTTT TCCGTATTTT	2340
TTATCAGCGA TAACTTTTAC GAAACCTTGA GCTGCGTCAG ATGCAATAGC ACGACCGTTA	2400
GCAGCAAAGT TAAACTTACC GATGGCAACA TCGTATTTCT CACGGGCTTG TTCTTCTGTC	2460
AAACCTACTG CTGCTACTTC AGGGAGAGTG TAGATGGCTG CAGGAGTCAA ATTCAATTTG	2520
GCAACTGCAT GATTTCTTTT AAGGGCATTT TCAGCGGAAA CTTCACCCAT GCGGAAAGCT	2580
GCGTGAGCCA ACATCTTAGT ACCGTTGATG TCACCTGGTG CATAAATGCC TGGAACTGAA	2640
GTTTCCATGT ATTCGTTGAC CTTGATACAA CCACGATCCA ATTCAAATC AACCTCTCCA	2700
ATACCTTCAA GGTCTGGCAT ACGACCAATT GAAAGAAGAG CTTTGCTTGC GATGATATCG	2760
TCTTTTCCTT CAACCTTGAT ACGAAGTTGA CCATTTTCCT CAATGATTTT TTGCAGTTTA	2820
GTACCAGTCA AGATGGTCAT TCCTTTACGC TCAAGAATCA AGCGAAGGTT CTTAGAAACT	2880
TCCACATCCA TAGCTGGAAC TATACGGTCC ATCATTTCGA TAACAGTCAC TTTTGAACCA	2940
AATGTCATGA AGGCCTGACC GAGTTCGATA CCGACAACTC CACCACCGAT GATAACAAGG	3000
CTTTCTGGCA CTTTCGTTTAT TTCAAGAATG TCATCACTAG TCATGACAAG TGGAGATTCC	3060
ATACCAGGGA CGTTGATCTT GTTGACTTTT GAACCACCAG CAAGAATGAT TTTCTTGGTT	3120

987

TCAAGCAATT CAGAACCATT TACCAAGACG TTCTTGTCCT TAGTGATTGT ACCAATTCCT	3180
TTATGAACAG TAACTCCGTA GCTACGAAGA AGTCCTGCAA CACCACCAAC AAGAGTATTA	3240
ACAACTTTAG ATTTAGTTTC TAAAAGTTT TCCATATCAA CAGTGAAGTT AGGATTTTCA	3300
ATCACGATAC CACGATTGTC AGCATGACCG ATATTTTCAA TAATTTTCAGC GTTATGAAGG	3360
TAGGTCTTGG TTGGAATACA TCCACGGTTT AAGCAGGTTT CACCAAGTTC AGATTTCTCA	3420
ACAAGGGCAA CCTTACCGCC GAATTGGGCA GCTTTAATGG CTGCAACATA ACCAGCAGGA	3480
CCTCCACCAA TCACAACGAT ATCAAAAGCA TCATCGCTCT TACCATCATC GTTTGAGGTA	3540
CTTGCTACAG GTACAGGGCT AGCTTCTGGC GATGCTGCTC CAGCTGTTGG GATGTTTTCC	3600
CTTTCTTCAC CAAGGTAACC GATAACTTCC GTTACAGGGA CAGTTTCACC ATCTCCTTTG	3660
AGAATGGCAA TCAAGTACCC ATCTTCTTCG GCTTCCAATT CCATGCTGAC TTTATCAGTC	3720
ATGATTTCCA AAAGGATTTC TCCTTCTTTT ACAAATCTC CGACTTTTTT ATTCCATTGG	3780
ACGATTTGTC CTTCTGTCAT ATCCACGCCG GCTTTTGGCA TAATTACTTC TAAGGCCATG	3840
TCTTCCTTCC TTTATCTATA TCTTAAAAAT GAATACTCTT GCTCTTAAAT TAACATTGAG	3900
ATTGGCGTTT CAATCAACTC TTTCAAGTCC TTCATAAACT TAGCACCAGC CATACCATCT	3960
ACGACACGGT GGTCAATGGT TAATCCTAAA CTCATGATTG GCGCAATCAC AATTTACCA	4020
TTGACGACAA CTGGCTTCTC GATTGTCGAA CTGACACCAA GGATAGCTGA GTTGGGTTGG	4080
TTAATAATCG GACCAAAGGA CTGAACACCA AACATTCCCA AATTACTGAT TGTGAATGTT	4140
GAATTTTGTA ACTCACTTGG AGCCAATTGA CCATCCAAGG TACGGCCAAT AACATCCTTA	4200
AAGGCTACAA CCAGTTCTGA AAGACTCATC TTCTCAGCAT TGTAACAAC AGGTGTCATC	4260
AATCCATTAT CCATCCCAAC TGCCATGGCA AGATTGACAT AGTTGTGAGT GATAATAGTC	4320
TTGCCATCTT CTGTCAATGA AGCGTTGATG TATGGGTGTT TCATAAGAGT CTTAACAAC	4380
GCAAGCGAAA GAAGGTCTGT TACAGTAGTC TTCTTCCCAG TTGCTTCCAT GATTGGCTCA	4440
AGAACCTTCT TACGAAGAGC CAACATTTCA GTCATATCAA CTTCATAGTT GAGGGTGAAG	4500
GTGGCGCAG TCAAGTAAGA TTCAACCATG CGTTGGGCAA TAACCTTACG CATTGGTGTC	4560
ATTGGAATAC GCTCGATTTT ACCATATGGT GTTACGTTAT CAGGGACTTC TTCCACTTTT	4620
TCAATCTGAG CAGGAGATTT GATGCTATCG TTTTCGATAT TTTCAGGAAG CAGGGCCAAA	4680
ACATCCTTCT TCATGATTTT ACCACGATGA CCGGTTCTT GGATTTCTTG CCAAGCAATG	4740
TTATGTTTGA GGGCAATTCG TTTTGCAAGT GCGGAAATGC GAACCACGTT TGTGTCTTTA	4800
TAAGTTTCCA CGTCTTCTTT GTGGACACGA CCGTTTGAC CTGAGCCAGA AACGTCGTAG	4860

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AGGTTTATCC	CTAAATCATC	CGCTAACTTT	CTAGCTGCAG	GAGTCGCTCT	TAGCTTGTC	4920
TCAGCCATGA	CCTCTCCAAT	TCTATTTATG	ATACAAAGGG	CGTCAAAAGC	GA CTGAAAAA	4980
TAGGAAATCG	ACGATGGCTT	CGATGAAGCC	AAGGAGATTT	ATCTTTTTC	CGATCTTTTA	5040
GCCCGTGCTC	TAATCTAAGA	TATTAATGAC	GAAGAGCTCT	GCACCTAAAA	GATACAAAGT	5100
TTCTCGTCAG	CTTTATTTTA	TTTACATAAC	TTATCTTATG	TAACCCTATT	CTTTGTTATA	5160
AGTTTTTCGG	ATTGCATCTT	TGATACTTTC	AACTGTTGGA	ATCATTGCAT	TTTCTAGGTT	5220
TTGTGCATAA	GGCATCGGCA	CATCTTCTCC	TGCACAACGG	CGAATTGGTG	CATCTAGATA	5280
GTCAAATGCT	TCTGATCTTG	AAATAATAGC	TGAAATTTCA	CCGATATAGC	CACTTGTTTT	5340
GTGGGCATCG	TTGACCAGAA	CAACCTTACC	AGTCTTCTTC	ACTGAGTTTA	TGATGATATC	5400
CTTATCAAGC	GGAACAAGGG	TACGTGGGTC	AACAATTTCA	ACTGAAATTC	CTTCTTCTGC	5460
TAATTCTTCA	GCAGCTTGAA	CCACACGGCG	AAGCATTTTT	CCATAAGTAA	CAACTGTTAC	5520
ATCCGTTCTT	TGGCGTTTGA	TTTCACCAAC	CCCAAGTGGA	ATTGTGTAGT	CTGGATCAAC	5580
TGGCACTTCC	CCTTTTTGGT	TAAATCTTGA	CTTGTA CTCA	AGTATAATAA	CTGGGTTGTT	5640
ATCACGGATA	GAAGACTTAA	GCAGGCCTTT	CATGTCCGCA	GGTGTTCAG	GTGCCACAAC	5700
CTTAAGTCCT	GGAATGTGAG	TAAACCAAGA	CTCTAGAGAT	TGTGAGTGCT	GGGCGGCAGA	5760
GCCAACTCCG	TTACCAGCTG	CACAACGAAC	AGTCATTGGA	ACCTGACCTT	TACCACCAAA	5820
CATGTAACGT	GTTTTAGCAG	CTTGGTTGAC	GATATTGTCC	ATGGCAATAA	CAGAGAAGTC	5880
CATGAAGGTC	ATATCGACGA	TTGGACGAAG	TCCTGT CATG	GCTGCTCCTG	CTGCTGCTCC	5940
AGAGATGGCA	GCTTCAGAAA	TCGGACAGTC	ACGGACACGT	TCTGGACCAA	ATTCTTCAAG	6000
CATTCCAACA	GAAGTACCGA	AGTCTCTCTC	GAAGACACCG	ACGTCTTCTC	CCATCAAGAA	6060
CACATTTTCA	TCGCGACGCA	TTTCCTCAGA	CATAGCAAGG	ATAATGGTGT	CACGGAAGGA	6120
CATTGTTTTT	GTTTCCATTT	TATCTCTTTC	TCCTTAGTCT	GCGTAAATAT	CTTCAAAGGC	6180
TGATTCAAGC	GGTGGGAATG	GGCTTTCCTC	TGCAAATTTA	ACAGAAGCTT	CTACTGCTTC	6240
CTTACTTGTC	GCTTGGATTT	CTTCCAATTC	TTCGGCACCT	GCAATGTTAT	TTTCAATAAG	6300
GTAATTGCCG	AGGTTTTTCA	TTGGATCTTT	TTGTTTCCAC	AATTCCACTT	CTTCACGCGT	6360
ACGATATTTA	CCAGGGTCAG	ATGATGAGTG	ACCGAGCCAG	CGATAAGTTA	CACTTTCAAT	6420
CAAGACTGGA	CCATTGCCAC	TGCGAACATG	GTCCACAGCT	TTCTGAAATC	CTTCATAGAC	6480
ATCGATGACA	TTGTTACCGT	CTTCGATGAA	CATTCCAGGA	ATTCCATAAG	CGGCGCTACG	6540
TTGATGGATA	TGTTCTATAT	TGGTCATTTT	CTTGATATCC	GCAGAGATAC	CGTAACCGTT	6600
GTTAATGCAA	TAGAAAATGA	CTGGCAGGTT	CCAGATAGAA	GCCATGTTCA	CTGCTTCGTG	6660

989

GAAACACCT TCATTGGTCG CACCATCTCC AAAGAAGCAG ACAACGATTT TACCGGTATT	6720
TTGCATTTGC TGACTGAGGG CTGCACCGAC AGCGATCCCC ATACCACCAC CTACGATACC	6780
ATTGGCACCA AGGTTCCCAG CATCAAGGTC AGCGATATGC ATAGATCCAC CTTTCCCTTT	6840
ACAGGTTCCA GTGTATTTAC CAAGGATTTT AGCCATCATT CCGTTGAGGT CAATCCCTTT	6900
AGCAATAGCT TGCCCGTGT CACGGTGGTT TGAGGTAATC AGATCATCTG GATTGAGAGC	6960
TAACATAGCC CCCACGTTAG CTGCCTCTTC ACCAACAGAA AAGTGCGTCA TTCCTGGCAC	7020
TTTCCCTTTC TTTACTAATT GTGCAATTTT TAAGTCCATG CGACGGATTT CTTCATCTT	7080
ACGGAACATT TCTAGCAAAA GATTTTATC TAAAGTTGAC ATCTTCTTGC CTTTCTAACT	7140
TTCTTCTTAC CTTACTATTT TACCGCTTTT GGCAATACT GTCAAAGTTT TTCTAAAAGA	7200
AATTTACAA AATAAAAAAG AAAACCCCGT GAAAACAAGG GATTTTCTTG TCAAGAATAT	7260
TTTTTCACAA ACTTTTATAG ATTTGGATTT TGCTAAAGAT TCAAATCTCT TCATAATCAC	7320
AGTTAAACGC CAACGGTAGA GCGCCCGCT CACAATCAAA CTAATAATCA AGCCGATCCA	7380
GTAAGAATAA GCTCCAAAAT CTGTTAGGGA ATCAAATAGC GTAAACACAGG GATTGCTACG	7440
CCCCAATAAC CAAGCAAACC AAGGTAAAA GGAATAACTG TATCCTTATA CCCCCGCAAA	7500
ATTCCCTGAA GCGGCGCCGC AAAGGTATCT GCTAACTGGA AGAAAAGACT ATAAGTTAAA	7560
AAACGCACTG TCAAATCGAT AAATTTTGGG TCCTTACCAT AAAGACTGGC CACATTTCCC	7620
CTAAAAATGT AAAGGAAGGT TAAGGTGAAG GCCGCAAAA TGAGGGCAGT CCATCTTCCT	7680
AGACCAATAT AGGTTTTTCG ATCATCAAAT CGCTTGGCTC CCACTTCATA GGAAACGACA	7740
ATAGCCATAG CCGATGAGAT ACTCATAGGA AAGGCGTACA TAAGACTTGA AAAGTTCATA	7800
GCTGACTGGT GACTAGCTAT AATCAAGGGC GAAAACCTAG CCATAATCAA GCCAACCACT	7860
GAAAAGATAG CCACTTCCGC GAAGACAGTT CCCCATAAG GCAGACCTAA ACGAACTCCT	7920
TCCTTAATTT TATCCATATT AAGTGAATT CGTTTCTCAA GGTGTAAGGC TTTGAGCTTC	7980
TCCTGTTTAA ATAAAACCAG AACAGAAATC CCAAGCAAGA CCCAGTAGGC CAAGGATGTT	8040
CCTAAACCAG CACCAGCCCC TCCCAGTTCT GGAACACCAA AGGCACCGTA AATCAAGAGA	8100
TAGTTAAATC CGCTATTGAG AGGGAGTAAC AAAAGCATGA GGTACATGGA CAGTTTGGTC	8160
AAGCCCAGCG AATCCAGCAA GGAACGAATG ACGCTAAAGA GCAACAAGGG GATAATCCCG	8220
ATAGATAAAA ACCAAAGATA GCGAACCGCT ACTGCCGCTA CTGCTGCTTC TAACCAATA	8280
TGATTCAAGA TTATTGGTGC CAAGAAAAGT ACCATCCCCA GCAAGACCAC AGATAGGCCC	8340
AAGGCCAAAT AAATAAATTG GTAAAAATCA GACGCAACTT CTTCTTTTTC GCCTCGACCA	8400

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AGATGGTGAC CAATGATAGG CACCAAGGCT GACACAATCC CTGTTAGAAA TGTAAAGAAA	8460
GGATTCCAGA TACTGGTTGC CATAGATACA CCAGCCAAGT CCATAGTGTT GTATTGACCT	8520
GTCATTGCAG TATCAACAAA AGAGGCAGAA TAATTGGCAA ATTGGTAGAT CAGGATTGGG	8580
AAGAAAATTT TTA AAAAATAA TACTAACTTC TCTCGTAAAC ACTTTGTCTT ATACATACTT	8640
CTCTTTCTAT TCTGATTTAT CTAAACCAAA GAGTTTCAGA CCATAGTTTT TC AAACTTAG	8700
CGGAGGTTTA TTAGATTTTG AAGTAGTATG CCAACACGCA CATGTACGAC AATAATAGCT	8760
TCTAACTAAA CCTCCGTTAT CATATTGAAC CGCATGGTCA GCTTTTCTT TAGTTTCATA	8820
TTGAATTTTG GAACGATTAG CTGCGGGACA GTAAATTCCA CTATTAGATT TCGCTTGTCT	8880
CTCCCTACGT TTTCGAAAAT AATTCATATT CTAACCTCTA TCAAGCTTGA TAGACGATTT	8940
GTCCCTTACA GATGGTATAT TTAACCTGCC CTTTTAAGGT TTCACCGATG AATGGTGAAT	9000
TAGCTGCTTT GGAAGCAAAA TGGGAGTCCA CAAAGCGGC AGCCTTGGCA TCAAAAATAG	9060
TGATATCTGC TGGACCATTC TCAGCCAAGT AACCTGCTTC AAAGTTGTAA AGCTTGGCTG	9120
GGTGTATGT CATTTTTTCA AGTAATTCCA TCAAGCTCAA CTCACCAGCT TCTACTAAAT	9180
AGGTCAAGCT GAGAGACAGG GATGTTTCTA AGCCAGTCAT ACCAGATGGC GCTTTGGTAA	9240
TATCCTCAAC ATTTTTTCA TCTACATGAT GAGGCGCGTG GTCAGTCGCA ATAAGTGTGA	9300
TGACACCTGA TTTGAGACCT TCGATAACGG CACGACGGTC TGATTCCAAA CGAAGCGGTG	9360
GATTCATCTT AGCATTGCTA CCTTGCTGTA AAAGAAGTGC TTCTGTCTTA GAGAAATGCT	9420
GTGGCGCTAC TTCTGCTGTG ACTTCTGCAC CTAACCCCTG AGCAAACTCC ACTACTTTAA	9480
CACTTTCTTC CTTAGACAAA TGCTGGATGT GAACATGGGC TTTAGTTGCA TAGGCAATCA	9540
TGACATCACG CGCCATCATA GCGTACTCAG CCACCCAGT AGCACCGCAG ATATGGAAAT	9600
GTCTCTAGC AATATTTTCA TTAAAGCCAA GAACACCGTT CAAACCTGGA TCTTCCTCAT	9660
GAAGGCTGAT AAAGGTATTG AGTTTTTTGG CTCTCTCCAT GGCTTCCTTG ACAATCTTAC	9720
TGCTCTCAAG CGGAATACCG TCATCAGAGA AACCAACCGC ACCAGCTTCT AAGAGTGCCT	9780
TAAAGTCAGT CAAGTTTTTA CCATTAAAGT TTTTAGTAAT GGTGCAACT GTCTTGACAT	9840
TAATCTTCTC TTTGGCAGCT GACTGGAGAA CTGCTTGCAA AGTCTCCACG TCTGAAATGG	9900
TTGGACTGGT ATTAGCCATC ATGACGACAG TAGTAAAACC ACCTGCAGCG GCTGCTAGGG	9960
CACCAGTATG AATGTCTTCT TTATGTGTTT GACCAGGTTT ACGGAAATGA ACATGAATAT	10020
CGACCAAGCC AGGAGCAACC ACAAGACCAG TAGCATCAAT CGTTTCTGCT CTTCTTCCG	10080
TGATCTCAGA CGCAATTTTG ATAATTTTCC CATCTTGAAC TAAGACATCA CAAACTTGAT	10140
CCAAACCAGA CTTGGGATCC ATTACACGAC CATTTTTGAT TAGTAGCATC TGCTTTCTCC	10200

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TTTATTCATA GAAATCAACT TGGGTATCCA ACAATTTATC CCCATCATAA ACAAACCTGG 10260
 CTGAAAAGAA GGGTTTATCC TCTAAAAGCC ACTCAACAAA GGTGTGGTCA CCTTCCCAAG 10320
 TCGGCTTGCT CAAAACCTCA TCATAGGGAA CCCATTCTAG CGTCCCCTCA TTGCAGTCAA 10380
 TCAAGTCGCC CTCAAACCTC GTCACCTTAA AAACATAGGT GTACCAGTCT AAATCTGGTG 10440
 TAAATTCAGG AAAAGTGATG ACACCTTTTA GAACTGGCTT GGCTTTGAGC CCTGTTTCTT 10500
 CAAGGATTTC ACGCGCCGCG CATTCTGGG GCGTCTCTCC TCTCTCTAGC TTACCACCCA 10560
 CACCAATCCA TTTCCCTTCA TGGACATCAT TGGGTTTCTT ATTACGATGG AGCATGAGCA 10620
 GTTCTTTCCC ATTATCAATG TAGCAAATCG TCGCTAACTG AGGCATATTT TCTCCTTATC 10680
 TAAGCCAATC GATTGGCTCT TGTCCTGTCT CTTTAAAGAA TGCATTGGCC TTGGAAAAGG 10740
 GCTTGGAACC CCAAATCCT CTATAAACCG ACAAAGGACT TGGATGGGCT GATTGATAA 10800
 TCAAGTGATG AGGATTGGTA ACTAATGCCT TCTTCTTACG TGCATAAGCT CCCCAGAGTA 10860
 CAAAAACGAC TGGTCTATCT AGATGATTGA CCACCTGAAT CACAGCATCA GTAAAAGGCT 10920
 CCCAGATTG ACCAGCATGA CCATTGGCCT GTCCAGCAGG AACAGTCAA CAAGCATTA 10980
 GAAGCAAGAC TCCTTGCTCA GCCCAAGCTG TCAAATCATG AGATTTCCTTA ACTCCGATAT 11040
 CATCTGACAA TTCTTTCAAG ATATTTTGCA AGGATGGTGG AGCTGGGATA GAGTCAGGTA 11100
 CAGAAAAACT CAAGCCCTGC GCTTGACCTG GTCCGTGATA GGGGTCTTGC CCTAGAATTA 11160
 CCACCTTAAC TTCTTCAAGC AGTGTGTGCA AGAGAGCCTG AAAAACCTTT TCCTTGGGTG 11220
 GATAAATAAT CCCCTGAGAA TAGACCTGCT CCATAAATG ATTGATTTC CCGAAATAAC 11280
 CCTCAGGTAA TTGCGCCTTA ATCAAAGCAT GCCAAGACGA GTGTTCCATA GCCGACTCGG 11340

(2) INFORMATION FOR SEQ ID NO: 148:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 12127 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 148:

AAAAAATAGA CTTGTTAGAC TATAAATGTA GTAAGCCTAC ACAAGAAAAA TACATAGAGA 60
 TAAAGGTGAT TATTATGAAA TTCAAAAAA TGCTTACTCT TGCAGCCATT GGCTTATCAG 120
 GATTTGGGCT TGTGCTGT GGCAATCAGT CAGCTGCTTC CAAACAGTCA GCTTCAGGAA 180
 CGATTGAGGT GATTTCACGA GAAATGGCT CTGGGACACG GGGTGCCTTC ACAGAAATCA 240

992					
CAGGGATTCT	CAAAAAGAC	GGTGATAAAA	AAATTGACAA	CACTGCCAAA	ACAGCTGTGA 300
TTCAAAATAG	TACAGAAGGT	GTTCTCTCAG	CAGTTCAAGG	GAATGCTAAT	GCTATCGGCT 360
ACATCTCCTT	GGGATCTTTA	ACGAAATCTG	TCAAGGCTTT	AGAGATTGAT	GGTGTCAAGG 420
CTAGTCGAGA	CACAGTTTTA	GATGGTGAAT	ACCCCTCTCA	ACGTCCCTTC	AACATTGTTT 480
GGTCTTCTAA	TCTTTCCAAG	CTAGGTCAAG	ATTTTATCAG	CTTTATCCAC	TCCAAACAAG 540
GTCAACAAGT	GGTCACAGAT	AATAAATTTA	TTGAAGCTAA	AACCGAAACC	ACGGAATATA 600
CAAGCCAACA	CTTATCAGGC	AAGTTGTCTG	TTGTAGGTTC	CACTTCAGTA	TCTTCTTTAA 660
TGGAAAAATT	AGCAGAAGCT	TATAAAAAAG	AAAATCCAGA	AGTTACGATT	GATATTACCT 720
CTAATGGGTC	TTCAGCAGGT	ATTACCGCTG	TTAAGGAGAA	AACCGCTGAT	ATTGGTATGG 780
TTTCTAGGGA	ATTAACTCCT	GAAGAAGGTA	AGAGTCTCAC	CCATGATGCT	ATTGCTTTAG 840
ACGGTATTGC	TGTGTGGTGC	AATAATGACA	ATAAGGCAAG	CCAAGTCAGT	ATGGCTGAAC 900
TTGCAGACGT	TTTTAGTGGC	AAATTAACCA	CCTGGGACAA	GATTAAATAA	AATGTTTGCT 960
CCATAAATCT	CTAAAGAGAT	GCAGACGTTT	CATCGTACAA	TAAGATAAAG	AAGGCAAGTA 1020
GGGAGGTGTC	GTATCTCCCT	TACTTTCTTC	ACTAGAAAGG	ACAAGATGTG	ACAAAACAAG 1080
CCTTCAAAGA	AGCAGTTTTT	AGGGCAATTT	TTTTCATGAG	TGCAACAGTA	GCTGTTGTAG 1140
CTATTTTGCT	AATCTGTTTC	TTTATTTTAA	GTAATGGCTT	ACCTTTCATA	GCTAACTACG 1200
GCTTTGCCCG	TTTTTTATTA	GGCAGTGATT	GGTCGCCAAC	GAACATTCCG	GCAAGCTATG 1260
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TGCCAACAGG	CATCTTGACA	TCGGTGTTTA	TGGTTTATTA	TTGTCCAAAG	CCCGTCTATG 1380
GCTTCTTAAA	ATCAGCTATC	AACCTTGATG	CAGCCATTCC	ATCTATTGTT	TATGGTTTTT 1440
TCGGCCTACA	ATTATTGGTG	CCTTGGATTA	GAAGCTTTTT	AGGAAATGGC	ATGAGTGTCC 1500
TAACCGCTTC	GTTACTATTA	GGAATAATGA	TTTTGCCAAC	CATTATCAGT	TTGTCAGAAT 1560
CTGCTATCCG	AACAGTTCCC	AAAACGTATT	ATTCTGGTAG	CTTGGCTCTA	GGAGCTAGTC 1620
ATGAACGGAG	TATTTTATAGT	GTCATCTTGC	CAGCTGCGAG	ATCTGGTATT	TTATCAGCAG 1680
TTATTTTAGG	AATCGGTCGC	GCAGTAGGTG	AAACCATGGC	AGTTATTTTG	GTGGCAGGCA 1740
ACCAGCCGAT	TATTCCAAGT	GGACTCTTTT	CAGGAACCAG	AACCTTAACA	ACCAATATTG 1800
TTCTGGAAAT	GGCTTACGCA	TCAGGTCAGC	ATAGGGAAGC	CCTTATTGCA	ACCTCAGCAG 1860
TTCTCTTTTT	CCTTATTCTC	TTGATTAATG	CCTACTTTGC	CTACTTGAAA	GGAAAATCAT 1920
CTTATGAGTA	AATACCTGCT	AAAACCTCTC	GTTTATTGTT	TTTCAGCTTT	AACCTTTGGC 1980
TCTCTCTTTT	TAATCATFGG	TTTTATCCTC	ATCAAAGGCT	TACCTCATCT	AAGTCTATCC 2040

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GTTATTCTGG TCTTTGGTGC TCTTCTTTTA GCCTTGCCCA TAGGGATTTT TGCTGGTTTT	2160
TATCTTGTGG AATATACAAA AAAAGATTCC CTTTGTGTTA AAATCATGCG ATTGGCCTCA	2220
GATACCTTAT CTGGGATTCC TTCCATTGTT TTTGGTCTGT TTGGCATGCT CTCTTTGTA	2280
GTCTTCTTAG GTTTCAATA CTCTCTGTTA TCAGGAATCT TAACCTCAGT TATCATGGTG	2340
TTGCCAGTCA TTATTCGCTC AACAGAAGAA GCCCTTTTAT CTGTTAGTGA TAGCATGCGT	2400
CAAGCAAGTT ATGGACTTGG GGCAGGTAAG TTACGGACTG TTTTATAAAT TGTTCTACCA	2460
GTTGCCATGC CAGGTATTTT AGCTGGAGTG ATACTAGCTA TTGGCCGTAT CGTTGGTGAA	2520
ACAGCTGCCC TCATGTATAC ATTAGGTACC TCTACCAATA CGCCAAGTAG TCTCATGTCT	2580
TCAGGCCGTT CTCTAGCCCT ACATATGTAT ATGCTGTCAA GTGAGGGGCT ACATGTCAAT	2640
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AGCTTATTAT CTCGAAAAC TGTGAAAGGA GCTTCCTAGT ATGGGAACAT TTTCAGTCAG	2760
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AGAAAGACAG ATTACTGCCT TGATAGGCCC ATCTGGTTGT GGCAAATCAA CTTTCTAAA	2880
AACCCTTAAC CGGATGAACG ATTTGGTTCC TTCTTGCCAT ATTGAAGGCC AAGTCCTCTT	2940
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GATGGTTTTT CAACAGCCTA ATCCCTTTGC CATGTCTATC TATGATAACG TGGCTTATGG	3060
CCCAAGGACA CATGGTATTC GAGACAAAA ACAATTAGAT GCCTTAGTGG AGAAATCTTT	3120
AAAAGGGGCA GCCATTTGGG AAGAAGTCAA AGATGATCTT AAAAAGAGTG CCATGTCCTT	3180
ATCTGGCGGT CAGCAGCAAC GCCTTTGCAT TGCGCGAGCT TTAGCAGTAG AACCTGATAT	3240
TCTGTTAATG GATGAGCCGA CTTCAGCCTT AGACCCTATC TCCACTTTAA AAATTGAAGA	3300
CCTCATTCAG CAACTAAAA AGGATTATAC GATTATCATT GTTACCCATA ACATGCAACA	3360
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CTGGCCTTAG CCTCCAAAGA CAAGGAGATG GCAGAGCTAA TTATCAATAA GGATCATGCT	3660
ATCAACCAAG GTCAAAGCGC TATCGAATTG ACCTGTGCCC GTTTGTTGGC CTTGCAGCAG	3720
CCACAAGTGT CTGACCTTCG ATTTGTGATT AGCATCATGT CTTCTGTTC AGACCTTGAA	3780

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CTAGCCCCTG ACGAAGAACA GTTACACCAA ATGGGTAAAT TATCCCTCAG CATGCTAGCC	3900
GATTTATTGG TTGCCTTTCC TTTGCACCAA GCCTCAAAAG CTATTAGTAT TGCTCAAAAA	3960
GATGAACAGA TTGACCAATA TTATTATGCC TTATCAAAGG AAATCATTGG ACTTATGAAA	4020
GACCAAGAAA CCTCAATTCC CAATGGAAC CAATACCTTT ATATCATAGG GCATCTGGAA	4080
CGCTCGCTGA TTACATTGCT AACATTGTG AACGCCTAGT CTACCTAGAA ACAGGAGAAC	4140
TAGTGGAATT GAATTAATTC AACTAATCCT TAAAAGAGAA GAGTACGATT AAGTACTCTT	4200
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TTTCAATTCT ATCGTGAACG AGGGAATGCT GAAAACCTTA TCAAAGAAAG GAAAGCAGGA	4320
TTCTTTGGGG ATAAGACAGA TAGTTCGACC ATGATTAAAGA ATGAAGTACG TATGATGATG	4380
GGCTGTCTGG CTTATAATCT CTACCTCTTT TTAAAGCAGC TAGCTGGTGA TGAAGTAAAG	4440
TCCTTGACTA TCAAGCGTTT TCGACGTCTC TTCCTTCATA TTGCCGAAA ATATGTCTCT	4500
ACTGCTAGAC GACATATTCT CAAATTCTCA AGTCTATACG CCTATTCAAA ACAGTTTCAA	4560
GCCTTATTG ATACAATCTG CCAGATAAAT CTGATACTCC CTGTTCATA TAGAGCTAGA	4620
GGGCAGGGGA AAACATGCCT AACAGAATAA GTCACCTTAT TTTAAAAATC GAGCATCAAA	4680
CCAAGGGAGG AGTCTGCCCT TTTTAGGAA AAAATCAAGA CAAATCTCCT CAATTATGTC	4740
TCGAACATCA GAAATTAAGC AAAATCACCA GAAGGACAGT ATTTCAACTA GCTTTTCTGG	4800
TAATTTTGA ACTGTGTAGT TCGTTAGTGC CAGATATGAA TAATTTGGGA TGATAAATCT	4860
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CTTTTGGCG ATAGTTTCAT CTTCGTATGT AGGAGTCCTC ATCAAGAAAT ACTTCAATTC	4980
TAGGTATTC TTATCCAAC CTATATAACT TGGCATCAAC TTGTAATCTT CAACCCCAA	5040
ACGTTTCACT ATATATTTTA ACTTTGTTAG TATTGGTCTG GATTCTCCAT TTTCATTTCT	5100
AATTAATTGA CGGATACTTA ATTCAGACTC ATCACCACAA AATTCTGAAC GACTGATTG	5160
TTTAGCCAAA CGTAATCTTT TAATTTTTC GCCAAACTCT CGCAACCTAC AAGAAGTTCC	5220
TGAGTTGTTT ACCTCTATTA TAAGCATATA CTGAATCAAA CTATCTATCA GATTCTCTCT	5280
CACTTTAACT AAAGACTAAG AGTTTATCCC TTCGTCTCGG TTTTGTGTA TTTTCCACC	5340
ATACCCAGT AATGCAAGTG CAAAATCCCC TAGAATATGA TAGAATAAGA GAAAGAACTC	5400
TATCAAGGAG GAAATCATGG AAAACAAAC CGTCGCCGTC TTGGGGCCTG GTTCTTGGGG	5460
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TAAACGATTA TCAACCATTC TTGAAGAAGA AATTCCTGAA CATCTCCGTA GTGATATCGT	5820
CGTTGTTTCA GGGCCTAGTC ATGCAGAAGA GACCATTGTG CGTGACCTAA CTTTAATAAC	5880
TGCTGCTTCT AAAGATTAC AAACAGCTCA ATACGTTTCA AAGCTATTTA GTAATCACTA	5940
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CATCCCTGCT GCTGGACTAG GAACTCGATT TTTACCAGCA ACCAAGGCC TTGCCAAAGA	6540
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TCTCGGAGAT GCTGTTTTGC AAGCCAAGGC TTTCGTCGGA AATGAACCTT TTGTCGTTAT	6840
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CGAAGTATCT GCTTACGGGG TTATTGCTCC GCAAGGCGAA GGAAAAGATG GTCTTTACAG	7020
TGTTGAAACC TTTGTTGAAA AACCAGCTCC AGAGGACGCT CCTAGCGACC TTGCTATTAT	7080
CGGACGCTAC CTCCTCACGC CTGAAATTTT TGAGATTCTC GAAAAGCAAG CTCCAGGTGC	7140
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TGCTCGTGAG TTCAAAGGGG CTCGTTACGA TGTCGGAGAC AAGTTTGGCT TCATGAAAAC	7260
ATCCATCGAC TACGCCCTCA AACCCACA AGTCAAAGAT GATTTGAAGA ATTACCTCAT	7320

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CCAACTTGGA AAAGAATTGA CTGAGAAGGA ATAACAAAAT CATTTATATA AAGATTAGCC	7380
ACACATAAAT TAAGTAAATT CTCTACTTGA ATCTACCTAT TTAATAAAAA CTAATGAAAA	7440
CGCTATACTT GTATTTGTTT TTTCAATAAA ATAAGAGTAG AATAAATTAG TATAGTAAAA	7500
CAAAAAGCA CCGAATCGGT GCGCACTTTT TCAAGTTGTG TACGGACAAA GCCTTATTTT	7560
AACTTTGCTA TGTGTGTTCT AATGGTTCCA AAATAATAAA TAATTTTAAA TTTGACTTAA	7620
CTGTTGGAGT AGTCATGGTT AAATTAAATC AACCGAGCCG AACATAAGTT GTTTAATTTT	7680
GTGGAAGCTA TTAATAAAAA TATAATAAGG GAGAAAGATA GGTGTAATTT TAATTTTAAA	7740
GTAATTGCGG ACACTATCAA AGAAAAAGAT TATGGAGAAC AAATTTGTAG AATTTATCGA	7800
AAACAATAAA AAAGTAATCA TTTTCATCAGT TGCAGTTGGT GTTGTATTGG TATTAGGGTT	7860
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AAAAGATAGC AAATCAGACA AAGAACAAGT TGATAAACTA TTTGAATCAT TTGATGCATC	7980
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AGGTAAAGAC TATCTTAATA ACAAAGTCAA AGAATCATCT AAAGCAATTG TAGATTTTCA	8100
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TGAAACTTTT AAACAAGAGA ATTTGGAAGA AACTCTTAAA TCTCTAAATG ATCTTGTTGA	8280
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GTCTTATAAT GGATCTTCCA ATTCAAATGT AGATTATAGT TCATCTGAAC AAACCTAATGG	8460
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TGGATCATCA GAACAATATT CATCTAGCAA TTCAAACAGC GGAGCAAATA ATGTCTACAG	8580
ATATAAAGGC ACTGGTGCTG ACGGCTATCA AAGATACTAC TACAAAGATC ATAATAATGG	8640
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TAGTCAACGC TAATAACTAT TTTAGAGCTG TGTGTTTCG AATGGTTCCA AAACACATTA	8760
AAAGCTACTC ATTTTTTAAG TAGCTTTTTT CTTATTCAAG TTTACATATT ATACTCAATG	8820
AAAATCAAAT TCAAACCACG TCAGCATCGC CTTACCGTAG GTATGGTTAC TGACTTCGTC	8880
AGTTTCATCT ACAACCTCAA AACCATGTTT TGAGCTGACT TCGTCAGTTC TATCTACAAC	8940
CTCAAAGCAG TGCTTTGAGC AACCTGCGGC TAGCTTCCTA GTTTGCTCTT TGATTTTCAT	9000
TGAGTATTAG TCGTCACAAT CCCATTCCTT TGTAGAAAAG CAAAATGGCG AGTCCTACGA	9060
ACAAGACTAC CGCTCCTAAT CTCTGGCTGG TGTATACAT CCGTTTTTCT CCTCTAACTG	9120

GAAAGATAAC TGCTAGAAAT GCGCCACCAA CTGCACCACC GATATGGCCT GCTAGGCTGA	9180
TTCCTGGAAT CAGAACACTT CCAATAATGT TAACCACAAA AAGTGTGAGA TAGGATTGCC	9240
CTAGCTGTTG GATATAAGGA TTGCGAGTTG CATAGCGAAG AACAAATAATC GCGGCAAATA	9300
GCCCATAAAG AGAGGTAGAG GCGCCTGCTG CTAAGGATTT AGGACTAAAT AAAAAACAA	9360
AGAGATTGCC CATCATTCCT GATAAAAGAT AGAGAAAGAA AAAC TGCTTA GAACCGAAAA	9420
TCTCCTCTAC CTGCCTTCCA AGATAATAAA GTGAAAGCAT ATTAACAATG AAATGTTCCC	9480
ACCCAATATG AACAAAAATG GCAGACAAGA GACGCCAAAC CTGCTCGGGA AAGAGGCGAA	9540
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CTGCAGTGAC CAACATTAGT AAAAATACCA AGGCCGTCAC TAAGAGGAAG AAAC TCGTCA	9660
CAGGGTAACG TCTATCAAAG ATTTCTTCA TCAATTAATA CCTCTGAAC AGGAATATCA	9720
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GAAAAATGTT CCAGATAGCG GTCATAATAG CCTCCACCG ATCCTATCCG ATATCCTTTC	9840
GTCGTAAAG CCAGACCAGG AACATGAATC AAATCAATCT GAGATGCATC CACCACTTCC	9900
AAATCTCCCT GTAGCTCCAG TAAGGCAAAG AAAGTTTTTA CCAACTGTTG CGGATCATAG	9960
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TTCAGCGCCT GCTCAATCAG TTCCTGCGTT TGAAACTCAT GAGAAAAAGA GAGGTAGGTT	10080
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AATTCGATT TCATAGACAA GCCCTCTATT CTGCTGCCTT CTTTTTCAGG AAAC TAGACA	10260
CCGCAGCCAC CCAATAGCT AAGACTTCTT CCTTAGGACT CATTGAGGG TGATGAAGAG	10320
CGTAGGGACT ATCGATACCT AGCCAAAACA TCACGCCATC AACCTTTGAA AGGAGATAAC	10380
CAAAGTCCTC GCCTGTCATA GCAGGTTCGA TATCAATCAA CTCGATTCCG TCTTTTTCGT	10440
CAAAGAAGTC CATCAGTTCA CGCGCCAAGG CTGGATTGTT CTCAACAGGT AGGTATCCAC	10500
CTTGTTGAG TTCCACTTCG ACTTCCATAT CAAAGGCAGC TGCAACCCCT TCTGCAACTG	10560
TTTTTACCCT CTTTTCGACC AAGAGACTCA TGTCTGTGT CAAGGCACGA ATAGTTCCAT	10620
GTAAAAAGC TGTGTCTGTG ATGACATTGT TGGTGGTTCC AGCTTGAAAA ACGCCGAAGG	10680
TCACCACTGC TCCCTCGATT GGGTTGACAT TGCGGCTAAC AACTGACTGC ACTTGGGTCA	10740
CAAAGTAACT AGCCGCCACC AAGGCGTCAT TGGCTTCATG AGGAAAAGCT GCGTGGCCAC	10800
CTTGCCTTT GAAACGGATC TTCACCTCGC AAGTTCCTGC AAAGAGTGTA TGAGTATTAG	10860

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TCGCAATCTG GCCGACTTTC AAATCTGGAC GAACATGGAG ACCATAGAAT TGATCTGGCA	10920
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CAGGCTGAAA TAGAAAGAGC AGATTATTCT TGGGTTGCTC CTCAAGGGCG CGCTCAAGAC	11040
AGCCTAAGGC AATGGTCATA TGAAAATCAT GGACACAGGC ATGCATGCGA CCTTGGTGTT	11100
GAGAAGCAAA AGGTAGACCT GTTTGTTCGA CGATAGGCAG GCCATCAATA TCTGTCCGCC	11160
AACCAATGGT TCGCTCCGGC TGACTTCCCT GCAGGTAGAC CAAAATCCCT GTCCGCCAAG	11220
TACGAATTTG AACAAAATCC TTGCCCGTAG TCAATTTCTC AATCACATCC AGCAAATAAG	11280
CCTGAGTCTT GAACTCCTCC AAGCCAATCT CTGGAATCTG GTGTAAATCT CGTCTAGTCT	11340
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CCGCCTCTTT TTTACTTTTA CAATTACAAG GTACGAAGCG CATCCTCTAG CGCTGTTTTT	11460
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TTTTCTGGGA CATCTGGGT AACAAATAGCT CCTGCTGCGA CAACTGAACC ACTACCGATT	11580
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CCGATTTTCA CACCGATATT GATAACAGAT CCCATCATGA TAACAGCATT GTCACCAATT	11820
TCCACCTGGT CACGGATAAT CGCACCTGGC TCGATACGAG CGTTGATAGC ACGCTTATCT	11880
AGCAAAGGAA CTGCAGAATT ACGAGCATCT TGCTCGACAA CATAATCTTG ATTTTCTACC	11940
AAACCTTCAA GAAGCGGAGC CACATCCTTC CAGTCTCCGA ATAGGACATT TCCTAGTTTG	12000
ACAACAGAGC TAGGCACAGC AGTTGCGAGT TGCCCCCTAA AGGTTACTTT GACACTGGTT	12060
TTCTTTTTCAG CATTGGCGAT AAATGGGATA ATTTCTTGAG CGTTCATTTT TGTAGCAGTC	12120
ATAGGTG	12127

(2) INFORMATION FOR SEQ ID NO: 149:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12566 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 149:

CCATCCTTCT GTTGATGTGA CAGGAATGAT GATAAATCAA CCAGTAGCTA GTCGCGAAGA	60
GGTGACAGAG GCTTTGAGTC ACTTGCGGGT AGAGCACAAT AGTCTCATTG CTCGTCAAT	120

CGTTGAGCCA AATGAAGCTG GAGAAACACG CTTTACCTAT GCCACTTATG GTGAGGGAAA	180
GCTTCCAGAA GGTCTGACCA TTTCTCCAA GGAGAGTGCA GAAACGAGTG ATTTATTAGG	240
GTCTTACTTG ATTGTATCAG GAAGTTTGA TGGAGTGAGC TTACAGACCA CCTTGAAAGA	300
GCTTGGTTAT CAAGGCTTTG TTTGGAATGG AGAAGATCCA TTTTCGATAG TCTTACTATT	360
GACGGCCACC CCTATGGTGC TACTGAGTTT AGCTATTTTT CTGCTGACCT TTATGAGTCT	420
GACCCTGATT TATCGGATCA AATCCCTTCG TCAGGCAGGG ATTCGCTTAA TAGCTGGTGA	480
GAGCTTGTTT GGAGTTGCTC TCAGACCAGT GTTAGAAGAT GTGAGACAGC TTATCTGCTC	540
AGTGCTGGTA TCCAGTCTTT TGGGATTGGG GATTCTCTGG TATCAAGGTG CCTTGTTTAT	600
GGCAACGGTG CAACTGGTCA TCATTGCTCT TCTACTTTAT GGATTGACCT TGGCAGGGAT	660
TTCTACCTTA CTAAGTGTCTG TCTATCTACT TGGTTTACAG GAAAATAGTC TGGTGGATCT	720
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AGCTGTATTG GTGGTCGGAT CGAGTGCAC AGCTCTCCTA CCCCCTACC GTGAAATGCA	840
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GACATTTACT GAAGAACGGT TAGCCAATAC AGACTCTTTT TATATTATGA GCAATGTTGA	1020
CAATTTCTCA GATGGAGCAG AAGTGGACCT AGATGGCAAT CGTCTCAGTG ACTACACACC	1080
GTCAGGAAT GTTATCTATG TCTCACCGCG CTATCTGATA GAAGAAAAGA TTACCGTTTC	1140
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CTATTTTGAG CAGTTCAGAC GGGAACTTAT GATTAAACGT CTGCTGGTA TGACAACTA	1740
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ATCTAGTATT TTGACAAGAG ATGGTTTGAT TAGCGCTCTA GTTGTAGCTT TGTTTACGCT	1860

1000

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CGATTTTCTC TGGTTTGAAT CTCAAGCTGG AGAAGGGCAA GGTTTATGCC TTAATCGGAA	2040
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GTGGAAGGGT TCTCTATCAG GGGAAAGATT TAAAAACCAT TCCCACTCGT GAGTATTTTC	2160
GAGACCAGAT GGGCTATCTC TTTCAAAATT TCGGCCTCTT AGAAAACCAA TCAATCAAAG	2220
AAAATTTGGA TTTGGGTTTT GTTGGTCAGA AAATCTCAA AGTAGAACGT TTGGAAAGGC	2280
AAGTGGGGGC TTTAGAAAAA GTTAATCTAG GGTATTTGGA TTTAGAACAA AAAATCTATA	2340
CTTTATCTGG GGGAGAGGCC CAACGAGTTG CCCTTGCTAA GACTATTTTG AAAATCCAC	2400
CCTTGATTTT GGCAGATGAA CCAACAGCAG CTCTTGATCC TGAAAATTCA GAGGAGGTTA	2460
TGAATCTCTT GGTGGATTGT AAAGATGAAA ATCGAATTAT CATCATTGCG ACCCATAATC	2520
CCCTAGTCTG GAATAAGGCT GATGAAATCA TTGATATGAG GAACTTGCT CATGTGTGAA	2580
AAAATCCGTA TTCGCAGGGT ATCTGATTAT CCTAGTGCCA GAGGTGGTTT AGAAGATATC	2640
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TGATTTTCAT TCCCAAAATA CAAGGGGAAT GTGTTACAAT AGTAGTAACA GATAATAGAA	3000
AAGAGAATAG ATGAGAATTG CAGATTATAG CGTGACCAAG GCAGTGCTGG AGCGTCACGG	3060
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CCACCGTTTG GTGCCAATTT TGGCAGATAC CCTGCGTGAT TTTGATAATG TGACCGTAGT	3300
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CCTGCCAATC AAGGTAGTGG CTAAATTTGCC TTAATACATC ACGACGCCTA TTCTCATGCA	3420
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GGACCGCATT TCAGCCCAGC CTAACACCAA GGCTTACGGT AGCTTGTCTA TCGCCGTGCA	3540
GTATTACATG ACAGCCAAGG TTGCCTTTAT CGTGCCCTCGT ACGGTCTTTG TGCCAGCGCC	3600
AAATGTGGAT TCAGCCATCT TGAAAATGGT GCGTCGTCCA GAGCCAGCCG TAGCAGTAGA	3660

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TCATTATCGG ACAGATTTTG ATGCTTTTGT TGGGGTGGAT CGAGGCTCGC TCTGGGTCTT	5520
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CAATCCTAAG TTGGCACCCCT ATATGCATCA AATAGAAATT GAGGATGGGC AAAACTTGAT	5820
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CAGACCAGTT GGATTACCGC TTTGACCAAG CCAGACAAGC CAGCCAGTTA GACCAAAAAG	6240
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TGACCCAAGT CCGTCAAGAA ATGACAGATA ATCTCTCCA AACTAGAGAC AAGACAGACC	6360
AACGTCTCCA AGCCTTGCAG GAATCAAATG AGCAACGTTT GGAACAAATG CGCCAGACGG	6420
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TCGAGAAAAT GTTCCTTTCA AAACGTAGTC TTAAGGCAGG CAGCCGTGTC TTGATTGTGG	9120
ATGACTTCTT GAAAGGTGGC GGAACGGTCA ATGGTATGAT TAGTCTCTTG CGCGAGTTCG	9180
ACTCAGAACT GGCAGGTGTA GCGGTCTTTG CGGACAATGC CCAAGAAGAA CGTGAAAAGC	9240
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TGAAAAACAG ATTGCTTTCT AAAAAATAGG CAAAAATCTT GTTTTTCTTT CAAGTCGTGA	10740

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TGGTATTTCG TTTATTGTCT TTTTGCAGGG CTGTCACATG CGTTGCCAGT ATTGCCACAA	10920
CCCAGACACT TGGGCTATGG AGTCCAATAA GTCACGTGAA CGGACGGTAG ATGATGTCTT	10980
GACAGAGGCC TTGCGCTACC GTGGTTTCTG GGGAAATAAG GGTGGGATTA CAGTCAGTGG	11040
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AGGAATCCAC TGTACCTTGG ACACCTGTGC TCTTCCTTTC CGTAATAAAC CACGTTACCT	11160
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AGTAGTCGCT TCTTTGAGAC GCGTTTGGTG TGGCTCAAGG ACGTGCTTGA GGGCGTTCAT	12300
CTTTTCAGAG TGAAGCGTTG CCTTCCATGA TTGGTAGATA CCAAGTGGA AGATAATCAA	12360
GCGTACGATA ATGGTTACGA TAATGATAGC GACACCAAAG CCTAGACCTT TATCAGTAGC	12420
GAAGTACTTG ATGGCTTCAG CCATAGGCGC TCCGATCGTA TTCCAAATAA ATCCTGTTGG	12480

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CTGACCTGTG GTTTTATCGA CATTGACACA GCCAGTCAAG ACAAGCAACA TAGCCACTCC	12540
CATAGCCGAG AGTGCAAAAT CGGGGT	12566

(2) INFORMATION FOR SEQ ID NO: 150:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 5238 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 150:

TGACACTCTG TAGGATTGTC GTTAATTGAT TGCTCGTACT CTCTACAATA ACCACCAAAG	60
TAAAAACGAC ATAGAAAGAT AGCATCAGCT GTAGCCATAG CGCCTTTGAC ACCTTCTGGA	120
TGATTATGAG TTACCTCTGC AGAAAGACTC GTAAGTCCTC TAGATGATGG CCATATACCA	180
GTTTTTCGCAT AAAAACCACA GTCCATGATC CAAGCACATG GAGAAATACG CATAGCTGAT	240
CCATTCCCAA AGCTATTATA AGGCTCACGG TTATCGCTGT TTAGCCATGC ATTAAACCGA	300
GCACCGTAAT CAGCATTTCGG ATACATTCTG CCATATTCTC TCATCGCGTC AATGAAGTCA	360
TCTTTTTGTC CACCATTTCAT AATTGCTTCT GCAACAGCAC AGGTCATAAC CGTGTCATCT	420
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ATTTTAAAAA TTTTCATTTT TTCAAAATAG GGTTTTACCA TTTCTTTCCA CCTAGCTCTA	660
TGAAAATTGA TTGATTTTAA AGGAGATAGG CCATAATTC CCAATGCATA ACCATCATTT	720
ACTTCAACAA CAAGTGTCTT GCCATCGCGA GTAACACCGA TATCTAGTCC ATAAGCTATT	780
GGCGCATCTT TCCAACATGA TATCGCTTCA TCAATTACAC TTGCATCAAA TTGTGCATGA	840
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TCAGCTATGA ATTCTACAAC CTCCTAATC CATATAGGAT AGTCGAAAGG TAGACCAATA	960
CCTATTAAAT CATGGGTTCC ATTAACAAC CTCCAGTAA AGACTTTTGA ACCAGCTTTA	1020
GGCTTAATAA ATTTTCCCA ATTATCAGGT ATATTCAAA TCTCTCCTAA AATACCAGCA	1080
TAAATCTTTT GACCATAAAA CTCTTTAAGC TCAATAGGAT AGTCATGAAC CGGAACGTTT	1140
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CTTGTTAACT CTTTATTTT AGAAAAAGAT TGATATAAAA TAACTTCTTC TCCTTGTAAG	1260
TAGGCACCTA CTTGAGCATT GTATTTATTA ATTGAAACCT CACTTGGTAA TTTACTTTGT	1320

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CTAATATAAA CAACCATTTC ATCACTCCTA TATCACTAGT GTTACACCAA TTTGTAAAAA	1380
ATAATAGCAA TTTTGCTCTT ATTTTTTTGA GTAAATAGCC CCCATAATAT CATCGAAATA	1440
ATCAACGGTA TTTAGGAGTA ATTCAATAAC CTGGGACTTT GTTAGTCGCA TTCCCCTTCT	1500
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CATTATTCTA TTTTATCGG TTGCCATTT CATCACCTCA AGTTAATTCT ATCACAGGTG	1620
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CACAGTAACT TTAAATCTTT GGTATTAAAA AATTTTCACA ATATTTATAG AAATAAAATC	1740
TGTCTCAAAT CAGTTATCAA ATCTAGTATA AATTATGAGC GGCTACTCTA ATACTTTCCC	1800
TCTAAACAAG AAAAAGACTT ACACTCAAGG GTTTTCTTCC CCCCCTTCGT TATAACGTTT	1860
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TCCAACTTCT TCTTTAACAT ATCCTTCTAC ATCTTCAATC TCTACAAACA TTGGGTCTAA	1980
GTGACACAAG AAATGCCAAA CTTCGATCCC TTTTTTTCTG TAAAGAATCG CTTACCGTC	2040
TTCACTTCCG AAAAAGCTTC TGTCGATTTC ATATCCGCGG CTTTCTAAGA AGTCTTTTGC	2100
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AATCTCTTTC CAAATAATGT TTACATTTTC CTCAGGATCG AACATAAATT TAGATAAAGG	2280
AACAATATTT CCGTTAAAAA TAATTTCCAT ATAATCCGGT ATGTTTTTAG GATTAAAAA	2340
CTCCACTTCA AAACCATCTT CTGTTTCCAG AGTGTATCCC GGGATTGAG CTACAAAGGC	2400
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GTCACCTGAC CAATTCAGGC TCTCTGTATC ATCTCATCAT ATTTCTACT TACTTTACGA	2580
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AGCTTCAATA GTCTGTTTCT TTGCTTTCGC ATCAATTAGT GATGATTCTA ATTCATCTAG	3060

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TTTGTCATAC ATACGATATA GTCTATCATC TAAATCCTGT TTCCTTCTCT TATAATGCTT	3120
ATCTTCAACA TCTAAATTAT CTATTTCTCT AATTAGCTTA AACTTTGTAG AATGACTCTT	3180
TCTCAATTCC TTTTGGTAAT TATCTATTTT TTTTCTATT TCAGAGGTAT CCACCTTCAT	3240
GTTGATTTTT TCTTGCATCA TAGAAGCAAA TTTCGGATTA CTTACTATCT TGACAATCAC	3300
CTCTGCAACA GCATCATCTA ACAATTCTTC TCTAATTTGC TTAGTGAATG TACACTTATT	3360
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TACAATTCCA GAAAGCAAGT GTGTGCGTGT ATCTTTTCTT TTATTCACAT GCTCATATTT	3540
CTTTGCTTGA GATTTTAGCT TAACCTGAGC AGCTTGCCAA ACTTCATCGG AAATATAGC	3600
TTCATGTATC CCTTCAGATA TTAGATATTC ATCTTGTTC AACTGCTTAT ATTCAATTTCT	3660
TGTACCATGA ACTTTTCTA AAGTTCTTCT TCCAAATGCT ATTTTCCCAT TATATACAGG	3720
ATTCTTTAAT ATCTTTCTTA TAAGACCTGC ATCAACAAA GGATTCCTAC CATTCGTCT	3780
TGGGATTTTT CTAATCCAT GATTCTCTAA GTATTTAGAT ATCCCATGG CTCCTATCGT	3840
AGTATTTACA TACTGGTCGA AAATCGTTCT TATTGCAACT GCCTCTTCCT CATTTATAAA	3900
CAGCTTGCCG TCTTCAAGTT TATATCCATA CGGAGCAAAG CCACCATTC ATTTTCTTC	3960
CCCTGCTTTT TGAATGCGAC CTTCCATTGT TTGAATACTG ATGTTTTCTC TTTCTATTTT	4020
AGCCACAGCT GATAAACAG AAATCATTAG TTTCCAGCA TCTTTAGATG AATCAATGCC	4080
ATCTTCAACG CAGATAAGAT TAACTCCATA ATCTGCATT ATATGAAGTG TAGAAAGAAC	4140
ATCAGCGGCA TTTCTTGCAA ATCTTGATAA CTAAACACA AGAACAAAAG ATACTCCATC	4200
TTTTCCAGAT TTTATATCTT CCATCATTCG ATTGAAGTGT ATTCTACCTT CAATAGACTT	4260
GTCAGACTTC CCGGCATCTT CATACTCTCC AACAAATTTCA TAATCGTTGT AAATAGCAAA	4320
AGCTTTCATT CGTGATTTTT GTGCCTCTAA CGAATACCCC TCTATCTGTA TTGACGTAGA	4380
TACTCGTGTA TAGAGGTATA CTTTTATTTT TTCTTTTGAC ATAGTATTAA CCTCAATATA	4440
ATTTTCTAT ATCATATATA ATTTTTTTAA TTTAAGTTTG GACTATCATT TCAAGTATAT	4500
TATAACACTT TTATTAGTCC GTCTCAATTT GTGTTTTTGC CATGTCAAAA CTATTTTCA	4560
TCTCTTGATT TTTTGCTGGC GTTGGATCGG GTAGATTATC TAAATCTAAA GCACCAGCAT	4620
ATTTTGCAAT CAGATTGCT ATTAATCAG CCAATCCATT CCAGTCATTG TCCAATATAT	4680
ACCTCCTCTA AAGTTTTATA TCTAATAATT ATTTGTTTAA TTAAGTTTTT TGACATTGAC	4740
AAGTGCTTTG GATTAGCAAC ATAGGAATCT CACTCCGCC TCTATCCGG ATGAGCCGGC	4800
TTCAACCTTA GAAGTATCAT TACCCTCATT TTCTTCATAG CGGATAGGGT ATCCCTCCCT	4860

1009

ATATTCAAAC TCTTACTTAT CGCTCACTTT CTTTTTGCTT AGCAGAACTT TTTTGGCCGA	4920
ATTATTACAG CGAAAGATCT TGACGGATAG GTTATTACGC TCCAAAAATA ATTAACGTCT	4980
TGTCTTGGTC TATTCAATTG TTAAGGTTC AATTATTCG AGAGTTATTA ATCTTTTTTAA	5040
AATTGACCA TCAGAAAAATA TTTATCTTGA TGTAACAAAA TTCTATAAAT TACCCTCTTA	5100
TACTTAACAG TGAAAAGAAG TCTTCTTGG TAACCAATTT TGAAATAGAA TTTGCTTATA	5160
TAAAAAGGTC CAATTCCCAC TGCATAAATA GCAGTAAAA TTAGACCCCTC TTGGTAACTG	5220
TCATCTAAAA GTCTTCTA	5238

(2) INFORMATION FOR SEQ ID NO: 151:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 13425 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 151:

GACGATTTAC GAAGAATCGA ACAAGAACCT GCTCCTATCA ATTCCCAACC TCTATCTCTA	60
AAATCTTGCA GTTCATGCTT ATACTTTTTT AAGAAATCTA GAATCATAGA TACGGTAGAT	120
GACATCGTCT GGTGACATT GGTCAAATA GAACAAACCA AAACGACTCG TTCTATACCT	180
CCAACCTTTC AAATGCATCT CATGTAAATG TTCTTCTTCC TTGTCCAAAT CAACAATGGT	240
GAAAATCCGA AATTCTACTC TGCTATTCAT TGTCTTACCC CAAAATTAGA AACATGCCT	300
GGCGTTATTT ATTAGATAAT TCTTCCACT TTTGACTCAA TCTCCAAAAA ATATAAGAAA	360
TCTGAATCGC AAAAATATC AATAAAACCC AATCTATTAT GAAAATCAA AACACTTTCC	420
AACTGAAAGA ACTACCTCCA GTGACAACT TTGAGAAAA CGGTAGTAGA GCTAAAAAGA	480
GAAATAAAAT AGGAAGCATC CGCATTGTTA AAATCCGTTT GGCATAAAAA AATCTTTTATT	540
TAAACGAAAA TATTATGGCA AAATTTACGC CAGTTTTTGA ACGGCTGATG TAGATATTTT	600
ATACTTTCAA AATGTTTAAA TGTGATTATT TATTTTGA AAATAGATCA CCAGCCCGAC	660
TGAAAGTGCT TATAGAATGA TAATAAGTCG CCTGCCGAAA ACAGCGAAAA ATAGCGGTGT	720
TATGCGGAGA TAATCTGACG CGATGCGAAA GTATATTGCA TACTTATTTT CAACAATTTA	780
GCAGAGTATT TTTATAAGTG TGATATAATA GAAGTATAAT TTGTTCTGAT AGTTTATTTT	840
ATGGAGAAGT AGATTTTATG AATGCGGAGG GTTCAATATG GTTGAGTTTA TAAAGTCTAA	900
GAAAGAAATG AGTGAGGAGG ATATTAAAGC AAATTCATC ACTCCTGCTA TTGTATCCAA	960

1010

AGGATGGAAA AATGGTGAGC ATATCGCTTA CGAAGAATAC TTCACTGATG GTCGAATTGA	1020
AGTTAGAGGA GATAAGGCTC GTCGTAAAGA AGGAAAAAAA TCAGACTATT CACTGTATTA	1080
CCAATTGGA ACTCGAATTG CAATTGTTGA GGCAAAGGAT AATAAACACA GCGTTCGAGC	1140
AGGATTACAA CAAGCTATTG AATATGGAGA GATTTTAGAT GTTCCATTG TTTATTCTTC	1200
GAATGGTGAT GGCTTTATTG AACACGACCG TATCACGAGA GAAGAACGTG AGCTGGAGTT	1260
AGACGAATTC CCTACTCGTG AAGAATTATT TTCTCGTATG ACGAAGGAAA AAGGATTGAC	1320
GTACGAAATT ACAGAAGCTA TCTCAACTCC ATACTATACA GACGCCTTCT CAATGAAAAC	1380
GCCACGCTAT TATCAGCAAA TAGCTATCAA CCGTACTATT GAAACAGTTG CCAGAGGACA	1440
AAAACGAGTA ATGTTTGTGA TGGCAACAGG AACGGGGAAA ACGTTCATGG CTTTTCAAAT	1500
TATTCATCGC CTTCGAAAAG CTGGTTTGGC TAAACGAGTT TTATTCTTAG CAGATAGAAA	1560
CATCTTAGTA GACCAAACGA TGGCTGAAGA CTTTAGGCCA TTCGAAAAGG TAATGACGAA	1620
AATTACACCA AAACCTTTGA CTGCTCCTGA AAAATTAAAT TCTTTTGAAA TTTATCTAGG	1680
GCTTTATCAG CAACTAATG GTGAAGATGG AACTGAAACA CATTATCAAA AATTGACAA	1740
AGACTTCTTT GATTTAATCG TAATTGATGA AGCGCACCGT GGTTCAGCTA AGGAAAACAG	1800
TAAGTGGCGT AAGGTAATTG ATTATTTTCTG TTCTGCGACA CAGATTGGGA TGACCGCTAC	1860
TCTTAAAGAA ACCAAGAATG CTTCCTAATAC GGAATACTTT GGTGAGCCAA TCTATACTTA	1920
TAGTTTAAAA CAGGGAATCG AGGATGGTTT TTTGGCTCCA TATCGTGTTA TGAGGGTTAA	1980
TTTAGATGTG GATGTGGATG GTTATCGTCC AGAAACTGGA AAAGTTGATG CTAACGGACA	2040
ATTAAATAGAA GATAGGTACT ACGGCAGGAA AGATTTTGAT AAAACCATG TCATTGATGA	2100
TAGAACGCAA AGAGTTGCCA AGTTTGTTC TGATTATATG AAGCAAAACA ATGCACGATT	2160
TGATAAAACA ATTGTTTTTT GTGTTGATAT TGACCATGCC GAGCGAATGC GTGCTGCACT	2220
TGTAAGAGAG AATCTAGACT TAGTCCAAGA AGACTATCGT TATGTCATGC AAGTAACTGG	2280
TGACAACGCT GAAGGAAAAG CTCAACTGGA TAACTTTATG GATGTCAATT CTAATTTTCC	2340
CGCTATTGTA ACAACGTCTA AATTATTAAC GACAGGAGTT AATGCTAAAA CATGTCGTTT	2400
GATTGTTTTA GACTCTAATA TCCAATCCAT GACTGAATTT AAACAAATTA TTGGTCGTGG	2460
CACACGTCTT TATCCTCAAA AGGGGAAAGA ATTTTTTACG ATTATTGATT TTCGAAATGT	2520
TACCAATTTG TTTGCTGACC CTGATTTTGA TGGTGATCCA GTGAAGGTGC TAGAAACAGG	2580
TGCGAAAACA GTCAGTGGTT CTACGCCCGG TTTCGTAGAT GAGGAAGGTG ACCCAGTAGA	2640
AAAAATATATC GTTACAGACA AGCAGGTTAC CATTCTTAAT TCTACTGTTC AAGTATTGGA	2700
TGAAAACGGG AAACGTGATTA CCGAAAGCCT GACCGACTAC ACTCGAAAAGA ATATCTTAGG	2760

1011

TAGCTACGCC ACTTTGAACG ATTTTATCAC AGTTTGGCAT ACGGCAGATA AGAAGAAGCT	2820
TATCTTAGAC GAACTTTATA AAAAAGGAGT TTATCTAGAT GCTATTCGAG AGTCGGAGGG	2880
AATATCAGAA CAAGAAATCG ATGATTTTGA TTTACTCCTA AAACCTGCCT ATGGTCAAAA	2940
AGAATTAACC AAAACGGAAC GTATCAATAA ACTCAAACAA AGCGGATATT TATATAAATA	3000
TAGTGAGGAA GCGCGTGCTG TTTTGGAAAT TTTACTGAAC AAATACATGG ATAAAGGTAT	3060
TGGAGAATC GAAAGCATTG AAACATTAAA ACTTCCAGAA TTTCAGATAT ATGGTGGAAC	3120
CTTCAAAATC ATCAATACTT ATTTTGGAGA TAAAAACGA TATTTACAAG CAATTAAAGA	3180
ATTGGAGCAA GAGCTATTTA CAGTAGCTTA ATGAAAGGAA AGTATGTCAA TTACATCATT	3240
TGTAAAAAGA ATTCAAGATA TCACTCGAAA CGATGCTGGT GTTAATGGTG ATGCTCAACG	3300
TATTGAGCAA ATGCTCTGGT TATTATTCTT AAAAAATTAT GATAGCCGTG AAATGGTTTG	3360
GGAATTAGAA GAAGACGAGT ATGAGTCAAT TATCCCAGAG GAATTAAAAT GGCGAAATTG	3420
GGCTCATGCT CAAAATGGGG AACGGGTATT GACAGGCGAT GAATTACTTG ATTTTGTCAA	3480
TAACAAGTTA TTCAAAGAGT TGAAAGAGCT TGAAATAACT TCAAATATGC CTATTCGAAA	3540
AACGATTGTT AAATCAGCTT TTGAAGATGC GAACAACTAT ATGAAAAATG GCGTCTTGTT	3600
ACGCCAAGTC ATCAATGTTA TTGATGAAGT TGATTTCAAT AGCCCTGAAG ATCGTCATTC	3660
GTTAATGAT ATTTACGAAA AAATTCCTAA AGATATTCAA AATGCTGGGA ACTCAGGAGA	3720
ATTTTATACG CCACGTGCAG CGACTGATTT TATTGCCGAA GTTCTTGACC CAAAACCTGG	3780
AGAATCAATG GCAGACCTTG CTTGCGGAAC AGGAGGCTTC TTGACTTCGA CTCTGAACCG	3840
TTTAAGTAGT CAACGTAAAA CTAGTGAAGA TACCAAAAAA TATAATACAG CTGTTTTTGG	3900
TATTGAAAAG AAAGCATTTT CTCATCTTTT AGCAGTTACA AATCTGTTTC TTCACGAAAT	3960
TGATGACCCT AAAATTGTTT ATGGAAATAC TTTGGAGAAA AATGTTTCGTG AATATACGGA	4020
TGATGAAAAA TTTGACATTA TTATGATGAA TCCACCTTTT GGAGGGTCAG AATTAGAAAC	4080
AATAAAAAAT AACTTTCCAG CAGAATTACG GAGTTCTGAA ACAGCTGATT TATTTATGGC	4140
TGTCATTATG TATCGTTTGA AAGAAAATGG TCGTGTTGGA GTTATTTTAC CTGATGGTTT	4200
TCTATTTGGT GAAGGTGTAA AAACTCGCTT GAAACAAAAA CTGGTAGATG AGTTCAACTT	4260
GCATACGATT ATTAGGTTGC CTCATAGTGT CTTTGCACCG TATACAGGAA TCCATACGAA	4320
CATTCTTTTC TTTGATAAAA CAAAGAAAAC AGAAGAAACT TGGTTTTATC GTTTAGATAT	4380
GCCAGATGGT TATAAAAATT TCTCGAAAAC TAAGCCGATG AAGTCAGAAC ACTTCAATCC	4440
TGTTTCGTGAC TGGTGGGAAA ATCGTGAAGA GATTCTGGAA GGTAAGTTCT ACAAATCTAA	4500

1012

ATCATTTACA CCTAGTGAAT TGGCTGAGTT GAATTATAAT TTAGACCAGT GTGACTTTCC	4560
AAAAAGAGGAA GAGGAAATCT TAAATCCCTT TGAGTTGATT CAGAATTATC AAGCGGAAAG	4620
AGCAACTTTA AATCATAAGA TTGATAATGT ATTAGCTGAT ATTTTGCAGT TGTGGAGGA	4680
CAAATAATGA CACCAGAACA ACTTAAAGCA AGTATTCTCC AAAGAGCGAT GGAAGGGAAA	4740
TTAGTGCCGC AAAATCCCAA TGACGAACCT GCAAGTGAAT TATTAAAGAG AATTAAAGCT	4800
GAAAAAGAAA AACTTATCAG TGAAGGAAAA ATCAAACGAG ATAAAAAGGA AACTGAGATA	4860
TTTCGTGGTG ATGATGGGAA ACATTATGGG AAGTTTGCTG ATGGAAGCAC TCAAGAAATT	4920
GATGTTCCCTT ATGATATTCC TGATACTTGG GAGTGGGTGA GGTTTTCTAC ATTGGTTGAA	4980
ATTGTCAGAG TGGGCTCTCC ACGACCAATC AAaGATTATC TTACTTCTGA AGTAGATGGA	5040
ATAAATTGGA TAAAAATAGG TGATACTGAA AAGGGTGAAA AGTATATAAA TAATGTTAAA	5100
GAAAAATCA AAAAATCAGG GCTTAACAAA ACTAGATTTG TAAAAAAGG TACATTTTGT	5160
TTAACTAATT CTATGAGTTT TGGTAGACCT TATATTTTGA ATGTTGATGG TGCAATACAC	5220
GATGGATGGT TGGCTATTTT GAACTATGAA AACTCATTA ATAAAGATTA CCTATTCTAT	5280
ATTCTTTCAT CAAATGTAGT TTATTCTCAA TTTCTATCTC TAATTAGTGG AGCTGTTGTG	5340
AAAAACTGA ATAGTGATAA AGTTGCTTCT ATTCTTATCC CTCTCCCCC ACTATCCGAA	5400
CAACAACGAA TAGTAGAAGC AATCGAATCA GCTTTAGAAA AAGTAGATGA ATATGCTGAA	5460
AGTTATAATA GACTAGAACA GCTAGATAAA GAATTTCCAG ATAAACTAAA AAAATCTATT	5520
CTTCAATATG CTATGCAAGG AAAATTAGTT GAACAAGACC CAAATGATGA ATCAGTCGAA	5580
GTTTTACTTG AAAAAATACG AGCAGAAAAA CAAAACTCT TTGAAGAAGG CAAGATTAAA	5640
AAGAAAGATT TGGACATTTT TATTGTTTCC CAAGGAGATG ATAACTCTTA TTATGGGAAT	5700
ATACCTATGA ATTGGGTTGT TATAAAAATA AAAGATATTT TTTCAATAAA TACAGGTCTT	5760
TCTTACAAGA AGGGCGATTT AAGCATTAAAT AATAAAGGTG TTAGAATTAT ACGTGGTGGT	5820
AATATTAAGC CTTTAGAATT TTCTCTGTTG GATAATGATT ACTACATTGA TACACAATTC	5880
ATCTCCTCTG AGCAAGTTTA TTAAAAACAT AATCAGCTAA TAACACCTGT ATCAACCTCT	5940
TTAGAACATA TTGGAAGTT TGCAAGAATC GATAAAGACT ATGATGGTGT TGTGGCTGGT	6000
GGATTTATTT TCCAATTAAC ACCATTTCGAA AGTTCAGAGA TTATTTCAAA ATTTCTATTA	6060
TTTAACTTGT CCTCTCCGTT ATTTTATAAA CAATTGAAAG CAATAACTAA ACTATCAGGT	6120
CAAGCTTTAT ATAATATTCC TAAAACTACA CTGAGCGAGC TATTAATTCC GTTAGCTCCT	6180
TTTGAGGAAC AGGAACTTAT TACTCAAAAA GTTGAGAAAC TTTTGGAAAA AGTAAATCAA	6240
CTTTGAAAAT GATTCTTTTC ATCTCTTCAT GATTAGAAAT AGGGATTAAT AATTCGGAGA	6300

1013

TACTGGTACT ATTTAATGTT TTCCCTTTGA TAGCATCTTT TGAATCACCT AAAGTAGAGA	6360
TAAGTGGCAA AAATATCATT AAGTAATCTC TGATAATATT TTCTTTATTA GCATAGGGGA	6420
ATATCGATAT AATGGCTTCA TTATGAGTGG CAGGAATATC CAATATGGCA ACTTTTCCAA	6480
TAGATAATTT AAAACTCATT AATAAAGTTC CTTTAGGTGA AATGTCTATT TTCTTTGATT	6540
TTAATGCTAA TTTAGAAATA GATTCTCTCG CATTAGTTAC ATAACCAGAT ATAGGCATAT	6600
CTGATATAGA TACCCAAGGT ATTTCAGTTC CCCAAAAAGT AGCTTCACTG CGTGGAGGAG	6660
TTTTTCCTAT TCTGAAGTTA ACTAGGCTAG CAAATTTAAT ATATCTCCAT GCTTCTGGGA	6720
TTTCATATAT AGGATAAGAG GTTGTTCGT CTTTGTCCC ATAATAAGAG CCATAATCAC	6780
AAAAATAGCA GGTAGTCAGT TTGACCACCT GTTATTTTTT ACCAATTAAC AATTTTATCT	6840
ACAATATTTT GTTGTTCAGT AGCTGTTTTT CTTAGATAAA TTCGAGTAGT TTCTATACTT	6900
TCGTGTCCCA TCAAATCTGC AAGCAAGGCA ATATCATTAT ACTTCGCTAA AAAATTCTTA	6960
GCAAATAAAT GCCTAAAAGA ATGAGGGTAA ATTACGTTAG GATTCATTTT GTATTTATCA	7020
GCATAATTTT TTAAGTGTG AGCAACTCCT CTTGCTGTAA TTGGTTCGT AAATTTATTC	7080
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AATTTTTTAG GAATGTACAG TCTACGAATT TTACCACCTT TTGAGTAAAT GTCAAAATAA	7200
CCGATTTCTA CATGCTCTAC TTTTAGTTTA ATAAGTTCAC TTACACCAGC CCCAGTTGCA	7260
CCTAAAAACC AAACGACAAA ATGCCATTTT AAAATACCAT CTTTTTTCOA ACTACGTTTA	7320
AGAAAAAGGT AATCAGCATG GCTAATGACA TCTTCTAAAA ACGGTTTTTG CTGTACTTTG	7380
ACAAATTTTA ATTTCAAATC ATCATGACCA ATAAAAGCCA GATATTTATT TACTCCTTGT	7440
AGTCGCAAAT TGACAGTTTT AGGTTTAAAA TTGTCTAATA AATATCCTTT GTATTCAAAT	7500
AAATCTTCCA TTTTGAGTTC GTAATTTCTC AAGAAAAATC GAACACCATA AAGGTACGAA	7560
CGCACAGTAT TTTCAGCTAA ACCAGCTTTC TTCAAATGTA ATTCAAATC TTTCACGTA	7620
AACTCCTAT CTTATGTTG ATAGAAATTC CACCGCACGT AAACTATTA TACTAAATTA	7680
GTGCGTCAAT ATGGGCGAAA AATTGTTTCA TTTTATCAAC GATTCTGGAT TGTTTCAGGAA	7740
GGGCTGGGAG GGGGATTAAA TATTCTTTTA TAGTTTTCGT TAATAATTCT TTTTGTTTTG	7800
TACTACCCGA CGCTTTTCT TCAATAACTG ACTGAACAAT AGGAGAGGAA AGAAAAATTAT	7860
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CAACAGCCCA GCCATAAGGA TTTTATTTT CATGGTAAAT AGCTAATCGT CCTAACGTAC	7980
CTAGACCTGT TGAATTCAC ATTAATCAC CATCTCTTAG TAATCTTCT TTCTGGTAAC	8040

1014

TATGAACTGT TTCGGGATCA ATAAATCTTG CTAAGTCAAT AGAAAAGCCA GACCATTGAT	8100
TACATTTCTG AGCAATCACA GGGTATATAG GAATATTTGA ATATTTTGGA GACTTCCCTC	8160
TTTGAATGTA GGAGGTTATA TCGTTTAACC TCACCCATTC CCAACTTTCT GGTATTTTAC	8220
AAGGTACTTC CTCATAATAA GAGTTATCAT CTCCTTGGGA AACAATAGAA ATGTCCAAAT	8280
CTTTCTTTT AATCTTGCTT TCTTCAAAGA GTTTTGTGTT TTCTGCTCGT ATTTTTCAT	8340
GTAAACTTTC GACTGATTCA TCATTGCGT CTTGTTCAC TAATTTTCCT TGCATAGCAT	8400
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GTGTGTGTTT GGATAGTGGG GGGAGAGCAA TTAATAATAG ATTAAATTA TAATCATTGA	8580
TTGCAGGATA ACTTGTTCCT GTAGATTTAT TATTAACACG ATTGATAAAA TTATCTGATA	8640
ATAAATAATA TTTCAAATAT GTTTCGTAA GTAAAGTATC CAAAACAATA AATGCTGTAC	8700
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ACGTATCTAT ATACCTAAAG GATTCTCTG GCTTATTTG CCCAAAATTC CAATAAATTG	8940
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TGCTTCCATC AGCAAATTC CCATAATGTT TCTTATGTGC TTCAAGTATA TAAAAAGCG	9060
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GTAAACTTGT AGATTTCGAT TTGAAGTAAC TTGTTTCTT GCCCGATATT GTTTTGA	9540
TTGAATTTT CCATAGTGAC TCCTTAATTT TCTTCTACAC GTCTGATGAT AAATCTAATT	9600
CGCAAAAGAG TCAAGAGGAT TTTTCGAAAA ATAAATAGCG ACCGAAATCG CTATTTTAAG	9660
GGTTATAGGT ATTTGATGGC TTAGACTGCT GTGTGACTGT TTACCCACAG GCAATCTTTC	9720
TTCTATATTA GTATTAGTAA AGGTCTAAAT AATTATCAAT TTCCCATGT GAAACGAAGG	9780
TTGCATAACT TGCCCATTCG ATTCGTTTGG CTCAAGGAA GCTAGTATAG ATGTGATCTC	9840

1015

CGAGAGCAGC	TTTAACCACT	TCATCTTCTG	TCAAAGCTTT	CAAAGCCTTG	TGAAGAGTTG	9900
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CTTCGATAGG	AGCTGGTGCT	TCGATTTTAT	TTTCAATACC	ATACAAACCA	ACTTCCAAAA	10020
GAACAGCCAT	AGCAACGTAA	GGGTTGCGCA	TTGGATCCAC	TGAACGCAAC	TCAAGACGAG	10080
TTCCCATACC	ACGTGAAGCA	GGTACGCGCA	CAAGTGGCGA	ACGGTTACGA	CCAGCCCAAG	10140
CAATGTAAAC	AGGCGCTTCA	TAACCTGGAA	CCAAACGTTT	GTATGAGTTA	ACTGTTGGGT	10200
TCATGATGGC	AGTATAGTTG	TAAGCATGCT	TGATCAAACC	GCCTAGGAAA	TGGTAAGCTG	10260
TTTCTGACAA	CTGCATTCTT	TTTGGATCAT	TTGGATCAAA	GAAGGCGTTA	TTTCCTTCTG	10320
CATCAAACAA	GGACATATTA	CAGTGCATAC	CTGATCCAGC	AATACCAAAT	TTTGGCTTCG	10380
CCATAAATGT	TGCGTAAAGT	CCGTGTTTGC	GAGCAATGGT	TTTAACAACA	AGCTTAAAGA	10440
TTTGAATCTT	ATCACAAGCA	CGGAGAACTT	CATCGTACTT	AAAGTCAATC	TCATGCTGTC	10500
CAACCGCAAC	CTCGTGGTGA	CTCGCTTCTA	CTTCAAATCC	CATTTTGGTC	AAGACATTCA	10560
CAATCTCACG	ACGTGTGTTG	TCCGCAAGGT	CAGTAGGTGC	CAAGTCAAAG	TAGCCACCCT	10620
TGTCATTAC	TTCAAGTGTT	GGGTCCCAT	TTTCATCCAA	CTTAAATAGG	AAGAATTCTG	10680
GCTCTGGACC	AAGGTTGAAG	GATTTGAATC	CAACTTCTTC	CATGTGACGA	AGAGCTCGTT	10740
TCAAATTACC	ACGAGGGTCA	CCCGCAAATG	GTTACCTTC	TGTTGTATAG	ACATCACAGA	10800
TCAGACCTGC	AACACTTCCA	TTTTCATCTC	CCCAAGGGAA	GAAGTGTCCAT	GTATCCAAGT	10860
CCGGGTACAA	GTACATATCC	GACTCATTGA	TACGTACAAA	ACCTTCAATA	GAAGATCCAT	10920
CAAACATAAC	CTTGTTGAC	AAGACCTTAT	CTAACTGTTT	ATCTGTAGCA	GGAATTTGCA	10980
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CCTTGACTTC	ACGACGAATA	TCTGCAGCTG	TGATTGGCAT	AAGTTTCTC	CTTAATCTAT	11100
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GTTGGAGGAG	TTCATTGTGA	AGTGCACGAC	GTACTTCAGT	CTGACTAACC	GCTTCTTGG	11220
ATTTGCTTC	ACGTTGAGCA	TATTTTTTCT	TAATGGCAGC	GATATTATAA	CCTTCAGAGA	11280
TATAATCTTT	GATTTCAAGC	AGACGATCCA	TGTCATTCAA	GGAATACATG	CGACGATTTT	11340
CTTCGTTTCG	ATCGGGCTTG	ATCAACTCTT	GATCTTCATA	ATAACGAATC	TGACGCGCCG	11400
ATAGATCGGT	CAACTTCATA	ACACTGCCGA	TAGGAAAAAC	AGCCATATTT	CGGCGAAATT	11460
CTTTTCTCTT	CATTTACAAT	TTCTTCTTTT	CTGTCTATTA	TAGTCTAAAA	AAAGACAAAC	11520
GTCAATTGAT	AATGTTATAA	AATGTAACAT	TATTTTCTTT	TTTCTCTTAA	AAAGAGACGA	11580

1016

ATACGATCAA TATCGTAATT TACGATAATT GCGACAAAAA CTCCCATAAA CGTTTCTAAT	11640
ACACGCACAA ACACGTACAA AATTGTCTCA CCACTTGGAA TTGATAGGGT AATGATTAAAC	11700
ATAGCTGCTA CACCACCAAT AACCCCTGCT TTGTTATTCA TGGCTACATT TGTCATAATG	11760
GTTAACATGG TGCAGATTGG AACAACTACC AAGGTCACCC AAAAGGCTTC GTGGAAAAAG	11820
GTATTTAATA AGAAGAAGAC CAAGGCATAG AGTCCACCGA TACTATTTCC TAGAATACGC	11880
GAAGTCCCAA AATGAACACT CTCATCAAAA CTCTCCCTCA GGCTAAAAAC GGCTGTCAAA	11940
GCACCAATTT GAAGACCTTT CCAGCCAAAA AAGCCAAAAA TCAAGAGAAC TAGAAAAACA	12000
GCAATACCTG TTTTAAAGGT TCGCATACCA AGTTTGAACT GGGATTTATC GAATTTATAT	12060
TTTTTAAAT AACTCATAAT CTCAACTTTC TATTTCCATT TTATCATAAA TCGGTGATTT	12120
TTATGAGTAA TAGTTGAGAG GAAGCGTTTT TATTTTAAGC AAAAGAAAAG AGGAACTTTC	12180
ATCCCTCTCT TCTTTGATTT ATTTATAAAA TCTTATTTTT CTGTCAAGGC TGCAAGTCCT	12240
GGAAGAACCT TACCTTCAAG AAGTTCCATT GATGCTCCAC CACCCGTACT AATCCATGAG	12300
AACTTGCTCG CACGGCCAAG GTTAATCGCT GCGGCAGCTG AGTCACCACC ACCGATGATT	12360
GATTTAACTC CTGGTTGTTT CACGATAGCG TCCATCACAC CGATTGTACC AGCTTGGAAG	12420
TCTGGGTTTT CAAATACACC CATAGGTCCG TTCCATACGA CTGTTTTGGC ACCAGTCAAA	12480
GCTTCGTCAA ATTTGGCGAT AGATTTTGGA CCGATGTCAA GACCAAGGAA GCCTTCAGAA	12540
ACTGCTTCAC CTTCAGTGTC ACGCACTTCA GTGTAACCAG CAAATGCGTT AGCTTCTTTT	12600
GAGTCAACTG GCAAGATCAA TTTACCATT GCTTTTTTCAA GAAGAGCTTT CGCAACATCC	12660
AATTTGTCTT CTTCTACAAG TGAGTTACCG ATTTGATAC CTTGTGCTTT GTAGAATGTG	12720
TAAGTCATCC CACCACCGAT AAGGACGTTA TCAGCTTTTT CAAGCAAGTT TTCGATAACA	12780
CCGATCTTGT CTGAACTTT TGAACCACCA AGGATAGCCA CGAATGGACG TTCTGGAGTT	12840
TCAACTGCTT CTTGGATGTA GGCAATTTG TTTTCAAGAA GGAAACCAGC AACTGCTTTT	12900
TCAACGTTTG CTGAGATACC AACGTTAGAT GCGTGTGCAC GGTGAGCTGT ACCGAATGCA	12960
TCGTTTACGA AGATACCATC TCCAAGTGAT GCCCAGTATT TACCAAGTTC AGGATCGTTT	13020
TTAGATTCTT TCTTGCCGTC AACATCTTCG TAACGAGTGT TTTCAACCAA GAGAACTTGT	13080
CCATCTTCAA GAGCGTTGAT TGCCGCTTCT AATTCAGCAC CACGAGTGAC ACCTGGGAAA	13140
ACAACATCTT GACCAAGTTT TGCTGCCAAG TCAGCTGCTA CAGGAGCAAG TGATTTACCA	13200
GCTTTATCAG CTTCTTCTTT CACACGTCCA AGGTGAGAGA AAAGAATTGC ACGTCCACCT	13260
TGTTGATGA TGTACTTAAT AGTTGGAAGA GCTGCTGTGA TACGGTTATC GTTAGTGATT	13320
ACGCCATCTT TCAATGGTAC GTTGAAGTCA ACACGAACGA GGACTTTTTT ACCTTTCAAG	13380

1017

TCAACGTCTT TAACAGTAAG TTTTGCCATG TTACAAAAAC TCCGG

13425

(2) INFORMATION FOR SEQ ID NO: 152:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 905 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 152:

GATTTATCCT ACCGnGAAT TTCCGGAGGG GTTCTAGCAG CAATCTTAGG AATCTATGAA	60
CGAATGATTG GCTTTCTGGC CCATCCCTTT AAAGACTTTA AAGAAAATGT TTTGTACTTT	120
ATTCCAGTTG CCATCGGTAT GCTTCTGGGA ATCGGCTTAT TTTCTACCC GATTGAATAC	180
CTGCTTGAAA ATTATCAGGT TTTTGTATTA TGGAGCTTTG CGGGAGCTAT TATCGGTACA	240
GTTCCTAGCC TCCTCAAAGA ATCAACTCGA GAATCTGACC GAGACAAGAT TGATTTAGCT	300
TGGTTATGGA CAACCTTTAT CATTTCTGGA TTAGGACTCT ATGCCTTAAA TTTTGTCTT	360
GGAACCTTAA GCGCCAGCTT TCTTAACTTC GTCCTAGCAG GCGCACTATT GGCCCTTGGC	420
GTCTTGGTTC CTGGCCTCAG CCCATCAAAT TACTTTTGA TTTTGGGACT CTATGCTCCT	480
ATGTTGACTG GTTTTAAAC TTTTGATTTC TTGGGAACCT TCTTTCCGAT TGGAATTGGT	540
GCAGGTGCAA CTCTCATCGT TTTTCAAAA TTGATAGATT ATGCCTTAAA CAACTACCAC	600
TCACGCGTCT ATCATTTTAT CATCGGTATC GTCCTATCAA GTACCCTTTT GATCTTAATT	660
CCAAATGCAG GAAACGCTGA AAGTATCCAA TACACAGGAC TTTCACCTGT CGGTTATGTC	720
ATCATCGCCT TCTTCTTTC GCTGGGAATC TGGCTTGGTA TTTGGATGAG TCAATTGGAG	780
GATAAATATA AATAATGGCA AAAAAAGTTA AAATCAAAAA AACATTGGTG GAACAAATCC	840
TATCTAAAGC AGCTATCCCT CATCAGGGGA TTCAAATCAA TGCCCTAGAA GGAGAGCTTC	900
CTCAA	905

(2) INFORMATION FOR SEQ ID NO: 153:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 4278 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 153:

1018

CTTGAATTAA ATAAAAACG TCATGCGACT AAGCATTTTA CTGATAAGCT TGTTGATCCC	60
AAAGATGTGC GTACGGCTAT CGAAATTGCA ACCTTAGCGC CAAGCGCCCA CAACAGCCAG	120
CCTTGGAAT TTGTGGTGGT ACGTGAGAAA AATGCTGAAC TGGCAAAGTT AGCTTATGGT	180
TCCAATTTTG AACAGGTATC ATCAGCGCCT GTAACCATTG CCTTGTTTAC AGATACGGAC	240
TTAGCCAAAC GTGCTCGTAA GATTGCCCCG GTTGGTGGTG CTAATAACTT TTCTGAAGAG	300
CAACTTCAAT ATTTTATGAA AAATCTGCCA GCTGAGTTTG CCCGTTACAG TGAGCAACAA	360
GTCAGCGACT ACCTAGCTCT CAATGCAGGT TTGGTTGCCA TGAACCTGGT TCTTGCATTG	420
ACAGACCAAG GAATTGGTTC TAACATTATT CTTGGTTTTC ACAAATCAAA AGTTAATGAA	480
GTTTTGGAAT TCGAAGACCG TTTCCGCCCA GAACTCTTGA TCACAGTGGG TTATACAGAC	540
GAAAAATTGG AACCAAGCTA CCGCTTGCCA GTAGATGAAA TCATCGAGAA AAGATAGAAA	600
GAAGAAAAA TGACAGCAAT TGATTTTACA GCAGAAGTAG AAAAACGCAA AGAAGACCTC	660
TTGGCTGACT TGTTTAGCCT TTTGGAATC AATTCAGAAC GTGATGACAG CAAGGCTGAT	720
GCCCCAGCATC CATTTGGGCC TGGTCCAGTA AAAGCCTTGG AGAAATTCCT TGAAATCGCA	780
GACCGCGATG GCTACCCAAC TAAGAATGTT GATAACTATG CAGGACATTT TGAGTTTGGT	840
GATGGAGAAG AAGTTCTCGG AATCTTTGCC CATATGGATG TGGTGCCTGC TGGTAGCGGT	900
TGGGACACAG ACCCTTACAC ACCAACTATC AAAGATGGTC GCCTTTATGC GCGCGGGGCT	960
TCGGACGATA AGGGTCCTAC AACAGCTTGT TACTATGGTT TGAAAATCAT CAAAGAATTG	1020
GGTCTTCCAA CTCTAAGAA AGTTCGCTTC ATCGTTGGA CAGACGAAGA ATCAGGCTGG	1080
GCAGACATGG ACTACTACTT TGAGCACGTA GGACTTGCCA AACCAGATTT CGGTTTCTCA	1140
CCAGATGCTG AATTTCCAAT CATCAATGGT GAAAAAGGAA ATATCACGGA ATACCTCCAC	1200
TTTGCAGGAG AAAATACAGG TGTGCCCCG CTTACAGCT TTACAGGTGG TTTACGTGAA	1260
AATATGGTAC CAGAATCAGC AACAGCAGTC GTTTCAGGTG ACTTGGCTGA CTTGCAAGCT	1320
AAACTAGATG CCTTTGTGTC AGAACACAAA CTTAGAGGAG AACTCCAAGA AGAAGCTGGC	1380
AAATACAAGG TGACGATCAT TGGTAAATCA GCCCAGGTG CTATGCCTGC TTCAGGTGTC	1440
AATGGCGCAA CTACCTTGC CCTCTTCTC AGCCAGTTG GCTTTGCTGG TCCAGCCAAA	1500
GACTACCTTG ACATCGCAGG TAAAAATCTC TTGAACGATC ATGAGGGTGA AAATCTTAAG	1560
ATTGCTCATG TGGATGAAAA GATGGGTGCT CTTTCTATGA ATGCCGGCGT CTCCACTTC	1620
GATGAAACAA GTGCTGATAA TACCATTGCC CTCAACATCC GCTATCCAAA AGGAACAAGT	1680
CCAGAACAAA TCAAGTCAAT CCTTGAAAAC TTGCCAGTTG TTTCTGTTAG CCTGTCTGAA	1740
CACGGTCACA CGCCTCACTA TGTGCCAATG GAAGATCCAC TTGTGCAAC CTTGTTGAAT	1800

1019

ATCTATGAAA AACAACTGG CTTTAAAGGT CATGAACAAG TCATCGGTGG TGGAACTTTT	1860
GGTCGCTTGC TAGAACGCGG AGTTGCCTAC GGTGCTATGT TCCCAGACTC GATTGATACC	1920
ATGCACCAAG CCAATGAATT TATCGCCTTG GATGATCTTT TCCGAGCAGC AGCAATTTAT	1980
GCCGAAGCTA TTTACGAATT GATCAAATAA AACGATAGAA GTCTGAGATC TTATGCTTGG	2040
ACTTCTTTTT GGAGGAAAG TAGATGTCTC AAATCGAAAG AATCAAACAG GCTATCATGG	2100
CGGATTCGCA GAATGCCAGC TATACAGAGC GTGGCATTGA GCCTCTCTTT GCAGCGCCAA	2160
AAACTGCTCG CATCAATATC ATCGGTCAGG CTCGGGACT TAAACTCAA GAAGCAGGCC	2220
TTTACTGGAA AGATAAAAGT GGTGACCGCT TCGGGGACTG GCTAGGTGTG GATGAAGATA	2280
CCTTTTACAA TTCAGGTAT TTTGCTGTTT TGCCTATGGA TTTCTACTTT CCAGGACATG	2340
GCAAGTCGGG TGATCTTCCG CCTCGTACAG GTTTTGCAGA AAAATGGCAT CCGCAGGTCT	2400
TACAGGAATT GCCTGATATT CAGTTAACCC TCTTGATTGG GCAATATGCC CAAGCCTACT	2460
ATTTACAGGA GAAAATCAGT GGAAGGTAA CGGAGAGGGT GAAACACTAT AAAGACTATC	2520
TGCCAGCCTA TTTTCCGCTA GTTCACCCAT CACCACGAAA TCAAATCTGG ATGGCCAAAA	2580
ATCCTTG GTT TGAGGCAGAA GTAGTGCCAG ATTTGAAAAA AAGAATTAAA ACCATTTTAT	2640
AGTCAATGAA AATCAAAGAG CAAACTAGGA AGCTAGTCGT AGGCTGCTCA AAGTACAGCT	2700
TTGAAGTTGC AGATAAACT GACGAAGTCG GTAACATACG CACGGTAAGG CGACGCTGAC	2760
GTGGTTTGAA GAGATTTTCG AAGAGTATTA GAAGAAAAAG AATGAAAGAA ATAGCCTTTG	2820
ACGCATTTTA CCAGCTTTAC CAAAACGACC AGCTTTCTTT AGTGGATGTG AGAGAAGTGG	2880
ATGAGTTTGC AGCTCTTCAT TTAGAAGGTG CCCACAACCT ACCGCTTAGT CAATTGGCTG	2940
ATAGTTATGA TTAATTGGAC AAAGATCGCT TGCATTATAT TATTTGCAA TCTGGAATGA	3000
GATCGGCGCG TGCTTGCCAA TTCCTATTAG AACAAAGTTA TAATGTTATC AATGTCCAGG	3060
GTGGCATGTT AGCCTTTGAA GAACTTTAAA ATTTTGCATT TCTCCTACTT GGTGTGGACT	3120
GGGTAGGAGA GTTTTATTTT TAGATAATTC TTATTTTAA GAAAATTGAA AACATTTAAT	3180
ATTTGCCTCG TGATGCTTTT TTCAGACTCC TAATCGTGGT ATACTAGGTC AGTATTTTAT	3240
AAATATGAAG GAGATTTTGA TGGCTAAAAA AGGTACCCTA ACAGGTTTGC TCCTGTTTGG	3300
AATATTTTTT GGTGCGGGGA ACTTGATTTT TCCGCCTTCT CTAGGTGCTC TATCTGGAGA	3360
ACATTTTCTT CCTGCCATCG CAGGTTTGT CTTTTCAGGC GTTGGTATCG CCGTCTTGAC	3420
CCTTATTATT GGAACGCTAA ATCCTAAAGG ATATATCTAC GAGATTTCAA CGAAGATAGC	3480
GCCTTGGTTT GCGACTCTTT ACCTCTCAGT TCTTTACTTG TCAATCGGTC CATTCCTTGC	3540

1020

TACCCACGT ACTGCTACAA CAGCTTACGA AGTAGGGATT AGCCCCCTTT TGTCGGATGC	3600
AAATAAAGGA CTTGGCTTGA TTGTATTTAC GGTCTGTAT TTTGCGGCAG CCTATTTGAT	3660
TTGCTTAAT CCATCAAAAA TCTTAGACCG CATTGGACGT ATTTTAACGC CAGTCTTTGC	3720
AATTTGATT GTATCTTGG TCGTTCTGGG AGCTATCAAA TATGGTGAA CAAGTCCCTCA	3780
AGTGCTTCA CTGCTTATCA AGCTTCTGCC TTTGGTACAG GTTCTCTAGA AGGTACAAT	3840
ACCTTGACG CCCTTGCCCTC AGTGGCCTTT AGCGTAATCG CAGTCAAAC CTTGAAACAA	3900
CTTGATTTT CAAGTAAGAA AGAATACATT TCAACTATTT GGGTTGTTGG TATCGTTGTT	3960
GCCCTGCGCT TCAGCGCTCT TTACATCGGT TTAGGTTTTT TTGGAAATCA TTTCCAGTA	4020
CCAGCTGAAG CGATGAAGGG TGAACACCA GGTGTTTACA TCTTGTCACA AGCCACTCAA	4080
GAAATCTTGG GCTCAACAGC TCAACTCTTC CTTGCAGCTA TGGTTACCGT AACCTGCTTC	4140
ACAACGACTG TTGGTTTGAT TGTGTCAACA GCTGAGTTCT TTAATGAGCG CTTCCACAA	4200
ATCAGCTACA AGGTTTATGC GACAGCCTTT ACCTTGATTG GATTTGCTAT TGCCAATTTG	4260
GGTCTTGATG CGATTATC	4278

(2) INFORMATION FOR SEQ ID NO: 154:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1953 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 154:

ACCCGATCAA ATGACAAAAG CTAACCTTGG TGCTAGGT ATGGCCGTAA TGGGTCGTAA	60
CCTTGCCCTT AATATTGAAT CTCGTGGTTA CACAGTTGCT ATCTACAACC GTAGTAAAGA	120
AAAAACGGAA GATGTGATTG CTTGCCATCC TGAAAAGAAC TTTGTACCAA GCTATGACGT	180
TGAAAGTTTT GTAAACTCAA TCGAAAAACC TCGTCGTATC ATGCTGATGG TTCAAGCTGG	240
ACCTGGTACA GATGCTACTA TCCAAGCCCT TCTTCCACAC CTTGACAAGG GTGATATCTT	300
GATTGACGGA GGAAATACTT TCTACAAAGA TACCATCCGT CGTAATGAAG AATTGGCAAA	360
CTCTGGTATC AACTTTATCG GTACTGGGGT TTCTGGTGGT GAAAAAGGTG CCCTTGAAGG	420
TCCTTCTATC ATGCCTGGTG GACAAAAAGA AGCCTACGAA TTGGTTGCGG ATGTTCTTGA	480
AGAAATCTCA GCTAAAGCAC CAGAAGATGG CAAACCATGT GTGACTTACA TCGGTCCTGA	540
TGGAGCTGGT CACTATGTGA AAATGGTTCA CAATGGTATT GAGTACGGTG ATATGCAATT	600
GATCGCAGAA AGCTATGACT TGATGCAACA CTTGCTAGGC CTTTCTGCAG AAGATATGGC	660

1021

TGAAATCTTT ACTGAGTGGG ACAAGGGTGA ATTAGACAGC TACTTGATTG AAATCACAGC	720
TGATATCTTG AGCCGTAAAG ACGATGAAGG CCAAGATGGA CCAATCGTAG ACTACATCCT	780
TGATGCTGCA GGTAACAAGG GAACTGGTAA ATGGACTAGC CAATCATCTC TTGACCTTGG	840
TGTACCATTG TCACTGATTA CTGAGTCAGT GTTTGCACGC TACATTTCAA CTTACAAAGA	900
AGAACGTGTA CATGCTAGCA AGGTGCTTCC AAAACCAGCT GCCTTCAACT TTGAAGGAGA	960
CAAGGCTGAA TTGATTGAAA AGATCCGTCA AGCCCTTTAC TTCTCAAAAA TCATTTTCATA	1020
CGCACAAGGA TTTGCTCAAT TGCCTGTAGC CTCTAAAGAA AACAACTGGA ACTTGCCATT	1080
TGCAGATATC GCATCTATCT GCGGTGATGG CTGTATCATC CGTTCTCGTT TCTTGCAAAA	1140
GATTACAGAT GCTTACAACC GCGATGCAGA TCTTGCCAAC CTTCTTTTGG ACGAGTACTT	1200
CTTGATGTT ACTGCTAAGT ACCAACAAGC AGTACGTGAT ATCGTAGCTC TTGCGGTTCA	1260
AGCAGGTGTG CCAGTGCCAA CTTTCTCAGC AGCTATTACT TACTTTGATA GCTACCGTTC	1320
AGCTGACCTT CCAGCTAACT TGATCCAAGC ACAACGTGAC TACTTTGGTG CTCACACTTA	1380
CCAACGTAAA GACAAAGAAG GAACCTTCCA CTACTCTTGG TATGACGAAA AATAAGTAGG	1440
TCAGCCATGG GGAAACGGAT TTTATTACTT GAGAAAGAAC GAAATCTAGC TCATTTTTTA	1500
AGTTTGGAAC TCCAGAAAGA GCAGTATCGG GTTGATCTGG TAGAGGAGGG GCAAAAAGCC	1560
CTCTCCATGG CTCTTCAGAC AGACTATGAT TTGATGTTAT TGAACGTAA TCTGGGAGAT	1620
ATGATGGCTC AGGATTTTGC AGAAAAATTG AGCCGAAC TAACCTGCCTC AGTCATCATG	1680
ATTTTAGATC ATTGGGAAGA CTTGCAAGAA GAGCTGGAAG TTGTTACGCG TTTTGCAGTT	1740
TCATACATCT ATAAGCCAGT CCTTATCGAA AATCTGGTAG CGCGTATTC GGCGATCTTC	1800
CGAGGTCGGG ACTTCATTGA TCAACACTGC AGTCTGATGA AAGTTCCAAG GACCTACCGC	1860
AATCTTAGGA TAGATGTTGA ACATCACACG GTTTATCGTG GTGAAGAGAT GATTGCTCTG	1920
ACACGCCGTG AGTATGACCT TTTGGCGACA CGG	1953

(2) INFORMATION FOR SEQ ID NO: 155:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 6474 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 155:

CCGGCAGTAC ACGAGCTTGG GGAACAGCCA CTGGAACGAT GAGGTGTGAG CTCAAAATAT	60
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1022

CCTCCAGTTA TGTTCCTTCT AATAGTATAC CGGAAGAGTG AAAGGATTTT ATAATGGAGC	120
GGTTACAAAG AACCTACTTT CTATTAAACA GTATACTATG AAAATGTGAA AATTTAACAT	180
TTTTTTGTAC AAATTTTATA AATTATTGCC TTTTAAATAT CAATAGTTAA TCTCTTATCC	240
AGATCCCCCT TGTGTAAACT TTATCTTTAT AAGCTTCAAG GCCCCATCC CATCTATTTG	300
CAACAATTAG ATCACTTTGT TTTGTAAATA GTTCAAAATT CTTTCAATA ATTACGTTAT	360
CTATACTAAC GTTTAAATTT GGTTCATATA CTAAAATTTT TATACCGACA ATCAATAGTT	420
CATTAAATTAT ACTTAAATA GCTGACTCTT TGTAATTATC TGAATTATAT TTCATCCCCA	480
ATTTATATAT TCCTACTATC TTTGGCTTTC GTTCCAATAT TTGTTTAACT ATGAACTGTT	540
TTCTATTTGT GTTTGAAATA TCAATCGCTT CTATCACTGG GGCATTTATT TCTATAAATT	600
CTTTTMTTAA TTGTTTAGTA TCTTTGGGAA GACAATATCC TCCAAATCCA AAAGAAGGAT	660
TATTATAAAA ATTTCCAATT CTGGATCTA AACAAACACC TTTTATTACA ACTTCAGCAT	720
TTAAGCTTCT CCTCTCAGCA AAAGAATCTA GTTCATTAAA AAAGCAACAC GGAGAGCTAA	780
GAATGTGTTA GAAAAAGCT TAATTGCTTC TGCTTCAGTA GGAGAACTA ACATAACATT	840
TTTAATATTG GCAGTACTAT GAGTACTAAT CGAAAGGAAC AACTCTGCAA TTTTCTTCC	900
TTCAACTGTC TCATCTCCAA CAACTATGCG ACTTGGATAT AAATTATCAT ATATAGAACA	960
ACCTTCTCTC AAAAATTCAG GGACAAAAAT GATATTTTTT GTATCAAACA GCCTTTTTAA	1020
TTTGTTTGAA AAGCCGATCG GAACTGTGTA CTTTAAATA ATCTTTCCAT TAGGTTTTAC	1080
CCTCAGAATC TTCGATACCG TTTGTTTCGAT TTCATATGTA TTAAACTAC CAATTTTCTC	1140
ATCATAATCT GTCGGAAGCG CAATAATATA ATAATCAATA TTATTTTTAA TTTCAGAAAA	1200
TGTATCAAAA AAAGTAATAT TTAAGTTATT CTCGCAAAA AACTTCATAA GCTCTTCATT	1260
TTTAGATGGA AGAATGCCCT TTTTAAATT ATTTATTTTT ACAGAATCTA TATCATATGC	1320
AACAACTTTA TATTTAGATG CAAATAGTAA CGCGTAGGCC AGCCCAACAT GCCCAAACC	1380
AATTACTGCT ATATTCATAA AACTACTTCC TTATTTCTTA ATCCAAATC TAATAGAA/A	1440
AGCTGCCCCA TTCCTTAAAT ACAACTCTTT AATATTGTTT AAAAGTTTTT CAACTGATTT	1500
CCAGATTATC AAAATCTGAG ATTTATAGCA CAATATTGAT GATATTCTAT CAATATAATT	1560
TTTTTCATCA AGTTCCTCTT GATACATTTT TAATTCTTTA GTTTTCCCA TATAACTAAC	1620
CATACTACTA TCACTTACAT ATGGGAAGTC CTCATAATAT ATTACTTTAT AACGCATAAA	1680
TTCAAGCGCC CTTCCAATAC TATTCACAAA AACATGAGCA ACATGGTCAC CAAGTGAAAG	1740
CGGACAATAT ACGACACATT TGTCGTCTAA ATGCATTAAC AGCTCTTTTA TGATATCATT	1800
CTTTAATGTG TCCTCATTTT TTAATTCACAT ATAGATATGA CGGTATAGAA AATTGCCATT	1860

1023

TCTATCTTTC CTATAGAGAC ATTCATAGTA CGATAAGTGT CTAAAATCAC ATTGTAGACG	1920
TTCACAAGCT AACCTGTCTT CTTTCTTCCT TTCTTCAATC GGATATTTCC CAAGGTTACA	1980
CAACTTATGA AATTGCTTAG CAGAGGGCTG TAGCTGTTGG CTCAAAGGGT AACCAGAAAA	2040
TATAGTAATA ACAAGTACAA TTTCTCCTTC TGAAGTTAAT TTTGAAATAT AATCACCACA	2100
GGAAAAAATT GCGTCATCTA AATGTGGAGA TAAAAAGATA TACTTAGTAT TGTACTCAT	2160
AACCATTCCC TCTACAATTT ATCTAAAAAC TACTAAGTG TCTGATTAAA TTCCACATCA	2220
TCAAAAAAAT TCACCTTATT CTTAATAATG AATATTTTCG TAAATAAACA TATATATAAA	2280
TATTTCAATA TCCTTTCAAT ATCATCCTCT AAATTCCTCT CAATATTTTG TATCAGCCCA	2340
TTTACAATCT TATTAAAAA GATAAGCTCT TTATCTCTAA AATTAAATAT TTTCATACAA	2400
CTGTTGTATC GAAAAATATA TAAAAAATT TTTACTAATG TTTGAATATT TAAACAACTA	2460
AATAAATGAG TTGTACCCGG GACACTATTT ATGTTATCAA GAACACTATC TTGAAACCTC	2520
AACTCACAGT TCTTTTGTG AAATTCCTTT TTATCGTTTA GATCTGATAT TTTTITAGAC	2580
ATTTCAACAA TCTCAGACAT TTTATATGGA TATCTAGGAT GAATGCCAAA ACTATGCAAA	2640
ATGAACTGCA CCCCCAAGT TAGACAGAAT AAATCTAACT TTTGGGGTGC AGTTCATAAG	2700
ATTGGGATAT TTTTITTTAG CTAGAACTAG TAGAAATATA TAGTCAAATA ACAGATACCT	2760
TAAGGGTTTC TCATCTACAT AAAAAATGA TACTTTTTC TCTTCAGTAA TTACCTCATA	2820
AGCTTCACAA TAGAATCTCA TGTTCCTC CCCTATATTC TTAAATAAAA TCCTTTGGAA	2880
ATTGATATAT CTTAGTAAAA TATTGTTTAA GTTCCGGATG CGGAGCATGG GTAACAATAA	2940
TGACAGTCAA ATCCTCTCTA TCTAATATCT TACGTTCAAT CGCTAACGAA GTTCTCCTAT	3000
CGATAGCAGA AGTTCCCTCG TCAATTAATA CTATTTCTTT ATTTCTAATT AGCCCTCTAG	3060
CTAAAGTAAT TTTTGTGTTT TGCCCTCCTG ACAGTAATCT CCCATCATCA CCAACATAAT	3120
AATCTAAAAT GTTATTAGGA AAATCTTTTA CACTCAAACC AACTTGCTCT AAAGACTGTA	3180
GTATTTCTTC ATCAGTATAA TTTTCTTCCA ATAAATATT ATCTCTAATC GTACCTTCAA	3240
ACAAATAAGC TTTTGTATCT ACATATAGAA CATTGGAAC CATATTTAAA TAGGAGGTTT	3300
TTTTTATATC ATCCCCGAG AATCGCAATT CTCCACTATA ATCTCTCAA AAGCCATTCA	3360
ATAATTTTAA TAATGTAGAT TTCCCGCTTC CACTTTCACC TAAATTTAAA TACTTTTCAT	3420
TACGTTGAAA ACAAAAAATTT AAGTTTMTTA ATATTTCTTT ATCTCCATAC TTATAGCAAA	3480
TATTTTTTGC TTCATATAAC GGAAATCTC TATTCACCTC ATTTGGTTTC ATATCATTCA	3540
TTTTATTGTA CTCAATTGGA TTAATTGAAT ACAATTTTAA AAAAAAGGC TTCGTACCAA	3600

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TAATAGAGGA TAATTGACCT CCTAATTCAC CTAGCGCTGT AAAAATAACA CCTGTTAGTG	3660
CTCCTATTGC TTCAATAGTA CCAATTTTCA CTATTCCTTT TATTGCAAGA TAGCCTGTTA	3720
AAAAAACGAG AGATATCTGA AAAAAATAT TGAGAAAGAA GCTAATAGCG CCTGCTAACG	3780
TTTCTACAGT TGTCTTTCTT TGTATAACCA TCTTTAATAA AATTCCTGCT TCTTTAATTT	3840
TCTTAGGCAA TACATATAAA AGATTCAAGG ACGCTAACAC ATCAAATCCA TTCAATATAG	3900
TCTCACTAGA TTTTAAAAA GCTTCATTTT GGTTAGTTAA ATTTAGACTA ACTTCTCGCA	3960
TTTTCGATGC AAAGATTTT GGTACAAGTA GCATAATCAT TAATGAAAAC AAGGTGGCTA	4020
CAGTCAATGA CCAATGATAG TGATTAAGAG TCACAACGTC AAATATAGTA CCAGAAATTC	4080
CTTTTATTAC TAAAAAAGT TGTTTAAACG CCTGATCATT TAAAGTCTGA ACATCATTAT	4140
TTAGCCACGA AAGATATGTT CCTGATGATT TACTATGAAA TTCTTGATAG GTAGAGTTAG	4200
AGATGTCTGT GGCAACTCTA TTTCGAATCT CTAGATTAAA CTCTTGGATC ACTTCAACCT	4260
GATAATTTTT CACTACCCAG TCAAGGAATA TTATCCCACA CCAGACAATC ATTTGGTAGA	4320
TTGACAATTT CAAAAACCGC TCTAAATTCA TCGCAATTAA TTCATTCAAC ACCAGAGCAT	4380
TAATAGTTGC TGCATAAATT AGCAATAATT GACCAGCAAC AATAAATATC GTTAATAAAC	4440
TAAATTTTTT TATATTTGAT TTTATAATAG TATACACAAT AGTTTCTCAC TTTCTAAATT	4500
TTAATGAAC ATAGTTTCA TATATACAAT AGAAAAAACC AAAATGATAT AATAACATAT	4560
ATTTCAAAAA AGAAATTCGT TAAAAATTTT TTCTTCTCTT GCCTTCTTGA TTACTTTTAA	4620
AGCCTTGCAAT TTGTCTCCTA TTAATAGTAA CCGCTTTATG TTTAAAGAAT AATATTTCTT	4680
TGTAACCAAT ATTCTCTCGT TGAAACTCAA TAAATTAAAA TATTTCTTAC AGTAATTATA	4740
ATATTCTTCA TCTGCATTAA TTGTTTTTTG TGTCACTCCA GTGATACCGT TTTCTTTACT	4800
GTGAGCGTAG TAATTCACCA AGAATTCTCG CACTATATCA ATTTGGTATC CTTGAACAAG	4860
TAGTTTTAAT AAAACAACAC CGTCCTGATG TGAATCTATT TTCTCAAAAC CATTAATTAA	4920
TTCTAGCACC TCTTTTTTAC ACAACCAAAA TGACGTACCT GCTATATTGT GAACCAATTG	4980
AACAAACAAG GGATTTCCAA CAAAATCGGT CTTCTCCTCT TCTCGTGTAC CATTTGGATA	5040
AATTATTATT CCATAACTAC AACTAAAGC TAAATTCTTC ATTCTACTCT TTTTAAACA	5100
AGCCATCAAC TTTAAAATTC GATCTGGCAT ATATTCATCA TCATCGTCTA AAAATGATAT	5160
ATACTTACCT CTAGAATTTT TGATACCTAT GTTCTGGCA TTAGTTGCAC CTAAATCTTC	5220
ATTACTTAAA ATTAACTTAA TTCTATGATT GGTATAGCCA AATTGATGGA TAATTTTATT	5280
TCTTAAATTT ACATTACTAT AATTATCATC AATAATTATA ACTTCGATAT TTTTATAACT	5340
TTGATGTAAA CAACTTTTCA CAGCTCTAAT CAGAGATTCA TACCTATTAT GTGTTGGTAT	5400

1025

TATAATACTT ACTAATTCTT GATCTATATT CCTATCCATG ACTACTCTTC TCTAATAATT	5460
CATCATATAC TCTCATGGTT TCTACAAACA TTTTGTGCAC AGAAAAATGT TTTCTTATTT	5520
TTGATTTACT ATTCTCACCT ATATATTTCA AATACTCAGA ATCATTGAGT AAAAAATTAG	5580
CACAAGCACA CACTCCCTCA ACATCTTCCT TCTCAAATAA AAATCCATCA ACCCTATGTT	5640
CAATAATTTT ACTTAACCCG CCAACATTAC TAGCTAAAAC CGGAGTTCCT TGTGACATTG	5700
ACTCTAAAAC ACACATAGGT ATTCCTTCTG TATCAGAAGG AATATACAAT AAATCCGATA	5760
TTTGGTAAAC TATAGTAGCT GGATAGATTT CACCAAGTAA CCTGAAATTA TCTCTACATT	5820
TCAAATGGCA AATTTTCTT TTTCAAAGCAG CCCACATACT ACCATTTCCA GCCATAATAA	5880
AAATCACATC TTCTCTGACT AAAAATAATT TTTCTGCAA TTCAAGGAAT CTATCCGGCC	5940
TTTTTCTGG ATCCAACCTT CCAACATAAC AAATGATTTT TTGTTATTTG GAATACAAAA	6000
TTCTTTTTTA AAGTCTTGAA CACCTACTAC ATCTAAATCG CTATTTGATA CATTAATTCC	6060
GTTATTTATT GCAACTATCT TCTTATTTT TATTATACTC TCCAATCTT TTTTTCATAG	6120
TTTCAGATAC ACAAATAAAA GCATCTCCCA TAGAATATGT CCAAAAATCA AAATAAGTCA	6180
AGAATTTCTT TTTTAAGTTA TATTC AACCC ATCCATGGCA TGTTATCACT GTCTTAACCT	6240
TTCCAAATCC ATTCTTGTC AGTTTTTTTA ACATATATAA AAAATAATTA GTTGAGTAGC	6300
CATGACAGTG TATAAGTTGG ATTTTAAATA ATTTTAAAT ATTTTAAACG TGTAAGGCAG	6360
TTTCAAAATT ATTTGAACAT TGAGTACAAT CAACATAGGC AATATCTAAA TTTTATAAT	6420
CATCAATAAC CTTTGAATCT CTAGATACAA TTATCAAAAT AGGGAATAGA GACA	6474

(2) INFORMATION FOR SEQ ID NO: 156:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 4792 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 156:

TATTTAACGA TTTTTCAT GTCATTCCT CAAAATAGA ATACCTTATA ATCTTAACAG	60
AAAAAGAGCA TTTACGCCAT TATATGATAT CTATCTCTGT GATAAGTTTT TTTTATGGGT	120
AATTTAAAAG ACCAAACGCA AGATGGCAAT CAAGACCACT CCAAAGAGAA CTGTCCGAC	180
TAGATTGCGG TAGCGAAAGG CTACCCAAGC TGTGGAAAG ACGGCTAAGA AGTCCAGTCA	240
TTTGATTGGA GGAAGACTGC CAACCTTACC TGCTACTACG CTTGAAAGAA TCAGGGCAAA	300

1026

GATAATGGAA ACAGGCAAAA ACTTCAAAAA ACGCTCAACA ATCGCAGGCA GGCCCTTATA	360
CTTGACCAAG ATGAAGGGAA TCATACGGGG AATCCAAGTC ACCAAGCCAG AGAAAATAAC	420
TGCTAATAAA AGATACTTAC TGACCATCTA AAACCACCCC CATGCTACAA CCAAGTAGCG	480
TCGCAACAG AACAGCTAGT GACTGAGACA TCACTGTCAA GAGCAAAAAG AAGGACACCG	540
CAACAACCTGC TAGGATAATG AGCAGATTGC GGACAGGAAT CCGTCTTTGC ATAATCTGAA	600
ATTGCGAAGC AAAATACCAA TAAACATCCC AACCAGGGCA AAATCCAAGC CAAAGATTTC	660
TGGATTGGT AGCAGGCCAC CCAGAGCCGT TCCGACTACT GTCCCCACAA ACCAAGCCAC	720
ATAGCTGTTA AGATTGTTTC CGTGCAATCCA CATAGGATTT ACCTTGTCTG TATGGGCCAA	780
TTCACCCATC AAAACGCCAT AGGTCTCATC TGTCAAGATA CTAGACATAC CGATATTGTA	840
CCAAAGACTG GTATGACGGA AATAAGTCGA TGCCTGTAAA CTCAACAAAA AGAGACGCAA	900
GTTGATTAGA AAAACCGTCA TAGCAATAGC TGCCACAGGA GCTTGAACCA CAATCAGTGC	960
CAACATGGCA AACTGGGCAC TCCCAGCATA AACAAAGAGA CTCATCAAGC CCATCTCAAC	1020
AGGTGTCACA TAGGGCGCAC CGATAATTCC ACAGGCCAGG CCGATACTGA CATAGCCAAG	1080
AGCCGTTGGC ATGGCTGCCT GCGCCCCCTC CTAATACTCT TTTTCTTTCA TCTTTCTCCT	1140
CATATTGTCT TAATAAATACT CAATGAAAAT CAAAGAGCAA ACTAGGAAAC TAGCCGCAGG	1200
TTGCTCAAAA CACTGTTTTG AGGTTGCAGA TAGAACTGAT GAAGTCAGCT CAAAACACTG	1260
TTTTGAGGTT GTGGATAGAA CTGACGAAGT CAGCTCAAAA CACCGTTTTG AGGTTGTGGA	1320
TAGAACTGAC GAAGTCAGTA ACCATACCTA CGGCAAAGTG AAGCTGACGT GGTTTGAAGA	1380
GAGTTTCGAA GAGTACAAGT AGGCTGAAAA GAATCCAACC ACAGCATGGA CTATTATATA	1440
GCAGATTGAA ATAAGATGAG AACAAATCGA TTGGGAAAGT AAAATTAATT TCTATAAATG	1500
TTTGTAGCAAT TGTTCGTAC TATTTTAGAT TCAGTCTATT ATAACACATT CAGAAAAGAG	1560
AAAAAAGTCT GTTGATTTTG ACCATCATAA AAAGACTGGC AATCCAGTCT CAAACATATA	1620
TTATAGAAAT TCTCCACTAA ATACTTTCAC GAATATTCAG AAGCATAACA AAGGCAACTA	1680
GAAGAAATAG CAATAAAACA AAGCTAACTG CCAGAGTTCC AAAGCTAGTA GCAATGGTTA	1740
CCAAAGCTAT TGTAAATAAG CTAGGTAAAA CAACCGTAAT GGCACCGATA GAGGATTGAA	1800
CTGCTCCCAT TGACTCCTCA GGTATTTGTT TAAAAACGAG TTCTTGCAAT CTAGGAGAGA	1860
GAACACCTGC GAAAAAGGCA TCCAAGGTAC TAAAGATGAG AATCCAGTCA AAACGAACTG	1920
TGGCAAATCC TACTAGAAGA AGCAACTGGA TGACAAGTGA GGCATAGAGA GCTGTTTTTA	1980
TGGAAATGGT ATGTTGCAGA TAGCCACTTA CAAGGCTTCC GACAATCAGG GCTGATAATT	2040
CTAGTGTTGC TAACAAGGCA AGAGATTGAC CAGTTTGTA ATTCAAAAAG GGCTGGTTCC	2100

1027

TTAAAAATAG	AGTGGAATA	GGAACCGTAA	CATTTATCAC	TGCTTGACTA	GTAAGATAA	2160
TAAACAAAAC	CAAGAGCACC	TTATTCATAT	TCCATATCAA	TTTCGATGAT	TGGAGCAAAT	2220
GCTGGCAAAA	GGATTTTACA	GAGAGTCCTT	CTTGATAGCT	AATCGTTTTT	TCTACTTTCA	2280
AGAGGTCAGT	TTTTATGAAG	AGGATACCTA	AAAATGCGAT	TAAAAAGGTA	AGAGCGTTCA	2340
GTAAGGAAAT	AAACTGGATG	GATAGAATGC	CTAGTAAGAC	TCCTCCTAGG	ATATTACTGA	2400
TTGTTTTTAC	TAAACTAACA	GTTGACTGTT	TAAAGCCAAT	AGCTTCTGCC	AGATGGTCTT	2460
GCCCAATAAT	TCTAATGAAA	ATCGGAGTGA	GCATGGCGCC	TGAAAAATAA	CTCAATGTGT	2520
CAGACAAGAG	GTTAATCAGA	CAAATAAATG	CTACTAGCAA	CAAGGAGAAA	GACTGCCCTG	2580
AAAGTGATAA	AGACACTATA	GAGTAAAGCA	AAAATTTTGC	AAAATAATG	ACTGTGTATT	2640
TCAAGACACG	ATGATGTTGA	AAATCCGCCA	AAACTCCCAG	AAAGATTTGT	AGAAGTTGGG	2700
GCAGGGTTTC	TGAAATCGTG	ATGAGTAAAA	TCGCCAAAGG	GGCAAAAGAT	GCATCTGCCA	2760
CATAATTCAG	GAAGGCCAGA	TAAAAAATCG	TATCCCCAAG	CGTTGAAATC	CACTGGTTGA	2820
TAGTTAATTG	CCTAAAATCT	CTATTTTGAA	GAAATACTTT	CATCACAAC	CCTTCTTAAG	2880
TTCAAATGGG	AATCTTTCCC	CAAGGATAGA	CCGCGATACT	ACTAACAACC	AAAATTACAG	2940
TAACATCAAA	AGCTGACCAA	TGCCATTGTA	GACTATATGC	AGTCCAATAG	GCCAATAAAT	3000
TGACTTTGTC	ATTCTAAATA	AGACTGCAAA	TATAAGACCT	CCACCCATAT	AGAAGACAAA	3060
GTCTGTCAAG	ACCCAACCGT	GATTACTAAT	GTGCGAGACC	CCAAATAAAA	CAGCGGAACC	3120
AAGTACATCT	AGCCCCCAT	TCTTTCCTTT	TTCCAGAGCA	GTATCACTA	ATCCACGATA	3180
AATCATGTCT	TCAAAAATGG	GACCTGCAAT	CACAGGATAA	AAAAAATACA	TCAAAAATGC	3240
TGTAGCCCCT	GTAAAGTCG	GAGCAGCATG	TTGATAAGAA	ATTTCATTTC	GAGTAGGTGG	3300
GAAAAGAAAA	AAGGTAAACG	AATTCCAAAC	AACAAAAGCA	AGCAGAGCTA	GGAAGGAATA	3360
GAAAAGATAG	GATCCTTTAA	ACTTCTACT	ATTGATTTTC	TGCCATTTC	CCGACCAAAT	3420
CATAGCAATA	AGAGCAAATA	AAACCACAAG	AAAATTCAAC	ATCATATCCG	ACAGATAATA	3480
GGCAAAGTCA	GATAGCCCAG	TAACAAGGTC	GCTGCGTAAA	ACTAGAACAC	TGAACTTCTG	3540
GTCAGCAATA	ACTAGTAGAA	AACTATAAT	AAAGTAGCGG	TGTGAGATTA	TCTTTTTCAT	3600
ATATCACCTT	TCTAATATCC	AAATACCAAT	AAAGTAACAA	TGAGTAAGAA	ACTATTCCAT	3660
GAAGCATGCA	GAGCTATAGC	CCAATAGATG	GATCGGGTGT	AGCGAAACAT	CATACAAAAT	3720
ATCAAGCCCA	TTCCAAAATA	CTTTATGAAA	TCTGTCGTTA	TCCAACCATA	CTGCAAAACA	3780
TGCATAGCGC	CAATATGGC	AGCGGAAACA	AGAACATCAA	GATAGTATCT	CTTAACTTTA	3840

1028

GATAAACTTG TCATCAAAAG ACCACGACAA ACAACCTCTT CTGATACAGG TGCATAATA	3900
CTAGTATAAA GTATTCGCGT AACAAAATAG CTAATTCCTG TTAAATTGGT GGCTACTTCT	3960
ACGACTGTAC TTCCATTCTG GGTACGAGGA AAGATATAGG TTGTTAGATT TGCCACACCG	4020
AACAATAAGA AAAAAGAAAG AAGGAAAACA CCCAGGTAAG ACCAACGAAA CTGGAAACGA	4080
CCCACTCTT TCCAATGTTT ACTTTTGACA AAAGCAATTG TAGCTATAGT TCCCAGAATA	4140
AGTACCAATA AACTTTGGAA CACATAGTAC ATATTATCAG ACAAAGCAAC CATAAAATCT	4200
AAGTCTGATG TGACATTAAA AATGAGGTAA TAAGTCAAAA TCAACAAGCC AGTTGCTAGG	4260
TGAAATTTCA CTTCTTTCAT TTTCTTCATC CTATTATCTC CTATAAGAGC CTATCTTCTA	4320
CGGCGGCCAA ACAATCCATC TGCTAAATCT ATAGTCCAAT CAAAAGCTCC ACGATTAGGA	4380
CTCATCCCTT GATTGCCCCA ACCAGGGTAA ATTCCTGGGA CGCCCCAACC AGATATACCA	4440
CTTCTCCAC CACCTCCAT AGAATTACG AGGTTGCCTC CTCTAACATC TTGCAACTCA	4500
GCTTCTGTCA ATTCCATTGT TTCTGCAAAT TGTAATTTA ACATCTTTTA CACTCCTTCA	4560
ATTATCTTCA TTTGTAAACC ACTTCTGCGA CCTAGGATT GCTTCAAGTG CTTTACAAGT	4620
ACAGTATAAC ACGAACATTG GCTTATTTTA GAAAATCGCA TATTTGATAT TTTTCTTAT	4680
AGAAATTTCA GATTTGCGAT TTTGGTGAAT TTGATTACTT CTCTGGTATA ATAAAGTTAC	4740
TACTAATGAG GAGTGGAGAA ATATGAAGAA ACAAATTTTA ACATTATTGA AA	4792

(2) INFORMATION FOR SEQ ID NO: 157:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2156 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 157:

CCGTTCTCGG CGACGGCCAT CTGATGAAGC TATTTATGAG GGAACTGGC AAGCTGGAGA	60
GTCAGAGTAT CTAGTCTTTC ACCGATTGCT GTGGCAGCAG ATGTGCAGGG AAAAGGAGTT	120
GCTCAAACTT TCTTAGAGGG CTTGATTGAA GGTTTTGATT ATCTTGATTT TCGCTCAGAT	180
ACGCATGCTG AAAACAAGGT TATGCAACAT ATTTTGTAAA AACTTGGTTT TAAACAAGTC	240
GGTAAGATGC CAGTAGATGG CGAACGCTTG GCCTATCAAG AATTAAAGAA ATAATGCAAA	300
AGAAGTATGT AAAAATCCTC TACTCCTCAC CAATTGGTAT TCTATCACTT GTAGCTGATG	360
ACCATTATTT GTATGGAATT TGGGTTGAGG AGCAGAAGCA TTTTGAGAGG GGAAGTAGG	420
ATGAAACGAT AGAAGAAGTT GTTAGTCATC CTATTTTAGA CCCAGTTATT GCTTGCTTAG	480

1029

ATGATTACTT TAAAGGCAAG CCTCAGGATT TATCCAACTT GCTCTTGGCG CCAATCGGAA	540
CGAATTTTGA AAAGAGAGTT TGGGACTATT TACAGGGCAT TCCTTATGGT CAGACAGTGA	600
CCTATGGACA AATTGCTCAA GACCTGCAAG TGGCTTCTGC TCAAGCAATT GGTGGAGCAG	660
TGGGACGCAA TCCTTGGTCT ATCCTAGTAC CTTGTCTCG TGTGTTGGGA GCAGGCAAGC	720
GTCTGACAGG TTATGCTGCA GGAGTGGAAA AGAAAGCTTG GCTCTTGGAG CATGAAGGAG	780
TAGATTTTAA AGATAGAAGC AATAGAAGGA GAAGCACATG TTAGAATTTA TCGAATACCC	840
CAAATGTTC AACTTGTA AAAAAGCAAAACA AGAATTAAAT CAATTAGGTG TGGACTATAA	900
AGCCGTCCAT ATCGTGGGAG AAACACCTAG CCAAGAAGTC ATTTTGAATT GGCTAGAAAC	960
CTCAGGATTT GAATTGAAGC AATTTTTC AA CACCAGTGGT ATCAAATACC GTGAATTAGG	1020
GCTAAAAGAT AAGGTAGGAA GTTTGTCAAA CCAAGAAGCG GCTGAGTTGC TAGCAAGTGA	1080
CGGTATGTTG TTAAAACGGC CCATTTTAGT AGAAAATGGA ACTGTTAAGC AAATCGGTTA	1140
TCGAAAATCT TATGAGGAAC TGGGACTGAA ATAGTTTTTA TCTATCTCTT TGATAGATAA	1200
AATATATAAC TTCCCTGTTT CAAAGTATGA TAACTAGTA GGTAACAAA GTCTGTATCT	1260
GACCGTAGCA AATAATTTC TTGACGGCAG AAGCATGGTA GCATGAATCA TTATCAGAAG	1320
AGGATGTTTT TATGAATGTT ACAACGATTT TAGCATCAGA TTGGTACCAA AACTTGATGC	1380
AATTGATTC GGATGGCAAG CTGTTTAGCC TACGTTGGT CTTTGATGGA ATCCCTAGAA	1440
TTGTCCAACA ACTTCCAACA ACAATTATGT TGACAATTGG TGGTGCCCTT TTTGGCTTGG	1500
TTTGGCGCT TCTTTTGGC ATTGTGAAGA TCAATCGTGT CAAGATTTTA TATCCCTTGC	1560
AGGCCTTCTT TGTTAGTTT TTTAAAGGGA CACcGATTTT GGTGCAACTC ATGTTGACCT	1620
ACTACGGAAT CCCTTTGGCT TTGAAAGCCC TCAATCAGCA ATGGGGAAC TGTCTCAATA	1680
TCAATGCGAT TCCAGCTGCA GCTTTTGC GA TTGTCGCCCTT TGCCTTTAAT GAGGCAGCTT	1740
ATGCTAGTGA AACCATTTCG GCAGCCATTC TCTCAGTTAA TCCTGGTGAG ATTGAGGCGG	1800
CACGCACTCT GGGTATGACC CGAGCGCAAG TTTATCGACG AGTGATTATT CTAATGCAG	1860
CGGTGGTAGC TACTCCAACC TTGATTAAAT CCCTCATCGG TTTGACCAAG GGAACATCTC	1920
TAGCTTTTAG TGCGGGTGT GTGGAAGTCT TTGCCCAAGC TCAGATTCTA GGTGGAGCTG	1980
ATTATCGCTA TTTTGAACGC TTCATCTCCG TTGCCCTTGT TTATTGGGTA GTCAATATCG	2040
GAATTGAAAG CCTCGGTCGT TTCATCGAGA GAAAAATGGC TATTTCTGCA CCTGATACAG	2100
TGCAACAGAT GTGAAAGGAG ACCTTCGTTA ATGATTAAGA TTTCGAATTT AAGCAA	2156

(2) INFORMATION FOR SEQ ID NO: 158:

1030

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 3140 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 158:

GTATCTCTAC ACATGTCTTC AATCGATTTT GTTGTCTCC AATTTAATTC CTTATATGCT	60
TTGTCTGCAT TTGCATAACA AGTTGCAACG TCTCCTGAAC GTCTTGGAAC TATTTTATAA	120
GGAATAGGGA TCTTATTAAC ACTTTCAAAT GTATTTACAA GTTGTAATAC ACTAGTGCCT	180
TCTCCCGAGC CTAGGTTATA GATATAAACA TCTGTTTTT CAGATACTTT TTCTAAAGCT	240
TTTATATGTC CTATTGCTAA ATCTACTACA TGGATATAAT CACGCACACC AGTACCATCA	300
AGCGTATCAT AATCATTTCC GAACACACTT AGCTCTGATA GCTTACCTAC CGCTACTTGT	360
GCAATATAAG GCATCAAGTT GTTAGGAATT CCTGAGGGAT CTTCCCCAAT CAAACCAGAC	420
TCATGAGCAC CAATTGGATT GAAATAACGA AGCAACGCAA TACTCCATTC TGAATCTGCC	480
ACATGAACAT CTTTAAAAT TTGCTCAAGC ATCACTTTCG TATACCCATA AGGATTTGTC	540
GCACCTGTTT GCATCGTCTC AATTAGAGGT GACTGATTGT TAATTCATA TACAGTCGCA	600
CTTGAAGAAA AGACAATCTT TTAAACATTA AATTCTGACA TCACTTCAAC AAGTGCCAAT	660
GTACTCATAA TATTATTTT GTAGTACATC ACAGGCTTTT GCACGGATTC TCCGACAGCT	720
TTATAACCTG CAAAATGAAT TGCAGCATCA ATCGATTCTT GTTCAAATAC CTTTCTCAAT	780
GCTTGTATTAT CACAAACATC TAATTCGTAA AACACGGGAC GTATTCCTGT AATTGCTTCA	840
ATACGGTCTA GCACCAAGAT GCTAGAGTTC GAAAGGTGTG CGACAATGAT AACTTCCTTT	900
CCTAAATTTA GTAATCTAC TACGGTATGG CTACCAATAT AACCAGCTCC GCCTGTTACC	960
AATATTGCCA TCTGGGTTTC CTCCTAATTA ATTCCAACCG ACTTAACAAA TCTCATAAAC	1020
GCTTCATGCC CAGACGGTGT ATTCTTATAA ACTCCTGCAT CTTCCAGAAC TCTCGCAAAC	1080
ACTTGTCCTG CTTCTGTGTG AACTACGCTA TTAACCTCTT CTTTATTAAT GCGAGGATAT	1140
TTTCTTTCA ATTGGTCGGC CCATTCTAAA TGATAATCCG CAATTGCATT ATCCTCTCCT	1200
AAAAGATATT TTCCAACCTC TTCTAACTCT GGTTCAAAC GAGGTGGTAA TATCGCAAGT	1260
CCCATCACTT CGATTAAACC GATATTTTCC TTTTAAATAT GTTGACATC TTGATGAGGA	1320
TGGAAAACAC CATCTGGGTA TTGTTCACTA GTATGATTAT CTCTTAGAAC AATATCTAAT	1380
TCGTATCTCC CGTCCACTTT ACGAGCAATA GGAGTCACCG TATGGTGTGG GACATCTTCA	1440
GTCATAGCAA TGATGTCTAC TTCTAAATCT GAATATTCTC TCCACTTATT TAGAATTTTA	1500

1031

GTAGCTAAAT CTAACAAGCG ATTTTATTT TCACTTTGTA ACCTAATTAC TGACATTGGC	1560
CATTTTACAA TACCAGCATT AACATCCTCA AAGTCTTTAA AACAAAATTC ACTCTCAAAT	1620
TTTGCTTTTT CCATTGGGAA AATATGTTTC CCTCCCTGGT AGTGGTTATG ACTAAGAATG	1680
GAGCCTCCTG AGATAGGAAG ATCAGAATTT GAACCAGCAA AATATCCTGG CAAAATATCA	1740
ACAATCTCCA ATAATTGTTT AAATGTTTTA GAGGTAATAG CCATTGGTAC ATGTTGACTA	1800
TTCAAAAATA TCGCATGCTC ATTAAAGTAT GAGTAGGGAG AATACTGGAA TCCCCATACT	1860
TCGTCACCAA GTTTC AACCG AATAATTCTA TGATTCGAAC GTGCTGGATA ATTTATTCGC	1920
CCCTGATATC CTTTATTTTC CATACATAGT AAACATTTGG GATAATTAGT TGCTTTTACT	1980
AATTTTTCAG CAGCAATTGT TTTTGGATCT TTTTCGGGTT TTGACAAATT TATCGTAATC	2040
TCTAGCTCTC CGTATTTAGT TGATGCTCGA AACTCAATAT TCTTAGCAAT AGCAGAAGTT	2100
TTAATATAAT CACTATCTTT ACTTAACTTA TAAAACTCTT CAACTGCTTC TTGAGGTGAT	2160
ATATCATATG AACTCCAAAA AATATCATTT AATCGACTAG GTAAAGGAAC TATGAAATTC	2220
ATTAACCTCG CTCCTAAACA TTCCTTTTCC TCGATTAAAT CTTTAATTTT ACCGTTTTTT	2280
AAGGCGATTT CCACTAAGTA ATCTTTTATT TGTTTCAGGT CATTTTTCATC GGAAATGCGA	2340
TCAATTCCCT CCTCACCTAT TAACGCTAGT ACTCTATTTT TCACATATAT TTTGTCAATT	2400
TCATTATACA TTCCGTATTC AATTACTCTA TCAACAAAAT TATCAATAAT TGTTTTCATA	2460
TATTTTCTT TCTAATTAT GTTCCCATAT TTTCTATACA TTATCCATTT ATAAATTGCT	2520
TGCGTAGTAT GAGCAATTTT ATCAAGGTGA TGAATAATAT CTAAAGCACT AATTACTTCA	2580
GAAACGTTCC CATCATCTTC AAATATGTAA TTCATTATTT TCTTTTCCAT ATTTATACTA	2640
AGCTCTTCTA TCTCATTCTG TTTTGTATA ACAACCATAT CTAAACATCC AGATTGTTC	2700
TCTCTATAAC AAGATATAGC CCTATTCATA TGCAGTCCGA TAACTTCATG AAGTATTTT	2760
ATTTTGTAAA TAATTTTCTT CAAAATTCA TTATTTTGAA GAATCTGTAG ATTTTTTAAA	2820
ATTTCAACAA TTCTATCCCC AATACGTTCA ATGTCAGTTG ATATTTTTAT TACACTAATA	2880
ATTCTTCTTA AGTCATATGA AACAGGATGT TGTAACAAA TTAATCATA TCCTTTTTTA	2940
TCAATATTTA GAACTGACTC ATTTATGATT AAATCTTCTT TAATCAATTC TACTCGTTCT	3000
TCATTTGATA AATATTCAAA TAACTTCTCA TATTTATCAA GCACAGATAC CCAAATGGTC	3060
TCTAAATTAT TTGATAATTC TATAATTTCA TTTTCTAAAT ATAACCTTAA CATTTAGGTA	3120
CCTCTTCTTA ACAAAGTTTCG	3140

(2) INFORMATION FOR SEQ ID NO: 159:

1032

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9048 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 159:

CCGGATGATT TCCTGGTCAG ATAGGGGGAA AGTGACTTCC TCAGCAATCG CGCGTAGAGT	60
AGGATTCCCT TCACGGATAA TATCGTTCAT ATCAATTAAG TGAGCAGCTT TTGTAATACG	120
TTCTATTGCA GACATTTTCT CTCCTTATAT TATGTTTAGT GCAGTTAGCT ACTGCCAAAG	180
CCCAAGTGGT ATACTTGGA TAAGCCACTG TGGATTAGTT CATTTTCTTT CATTACCTCT	240
ACATGATATC ACAAATGAC AAGAATTGAA AGCATTATGG CATTTAGGAT TTATAGAAAA	300
TAGATAGGAA GTTCAATTCA ATTGTAAG AAATACTTAT CTGTGATATA ATAAAAAGAA	360
AAGGCTTGCA TAAGAAAGTA GGGAGAACGA AGATACAAAG AAGACAAAT CGAAATCAGG	420
GTGGTTTAGC TTTTCGTTTT ATGAAGGGCT TGGTAACTT TTTAGGAGTT ATCGCAAGTG	480
GAGCAATAAG GGATTTGTGG CGATACTCTT GCTAGCAGTT GGTTTATCAA TGGGCTTGGT	540
CTTGTTGTTT GAAAGCTTCC AAGGAATCCC TTGACTAGTC AAAAACGAGA TACTATTTCT	600
CAAGAGGGGA CTAAGCAAAA GTCTCAGGAG TAGGAAGAGG AAAAACTGC CAGAATTATG	660
GCCACGGGG ATTTGCTCTA CCACGATGGA CTTTCTTTT CAGCTAAAAA AGAAGACGGT	720
ACCTATGACT TTCATGAAAA TTTTGAGTAT GTGACTCCTT GGCTCAAGCA AGGGGACTAA	780
GCAGCAGATT TAGCTATTGG TGATTTTGAA GGAACCATTA ATAAGGATCA TTATTTAGCG	840
GGTTATCTTC TCTTTAATGC TCCTGTTGAA GTTATGGATG CTATTAAGGA GGCAGGTTAT	900
CATGTGCTGG ATTTAGCTCA TAATCATATT TTGGATTTCG AAATTGAGGG AGTTATTTCA	960
ACGGCCGATA TTATTGAGAA AGCTGGAATC ACTCCAATCG GAGTTTATAC GCACGAACCA	1020
CGTGATCAGG CTCCGCTGGT CATTAAGGAA GTGAATGGTA TCAAGGTTGC ATTGTTAGCC	1080
TATTCCTATG GTTTCATGG AATTGAGCAG TATATTTCTC AGGAAGACTA TAATCGTTAT	1140
CTTTCAGATT TAAACGAAGA TAAGATGAAG GTTGAAATTG AACGGGCAGA GAAGGAAGCA	1200
GATATCACCA TTATCATGCT TCAGATGGGT GTTGAGTATC GATTGGAACC AACTGAAGAA	1260
CAAAAAGCTC TTTATCACAA GATGATCGAT TTGGGAGCGG ATATTATCTT TGGAGGGCAT	1320
CCTCACGTTG TTGAACCATC TGAAACGGTT GAAAAAGATG GAGATAAGAA ACTCATTATC	1380
TATTAAATGG GGAACCTCAT TTCCAATCAA CGAATTGAAT CTATGGGAGA TGAAGAGAAT	1440
GCTAAGTGA CTGAACGTGG TGTTCTCATG GATGTCACCA TCAAGAAGAA GGATGGAAAA	1500

1033

ACAACTATCG GAACAGCTAA AGCTCATCCT ACTTGGGTCA ATCGAACACC AAAGGGAACC	1560
TTTTCACCAG AAGGATATCC CTTGTATCAT TACCAAACCTT ATATTTTGA AGATTTTATA	1620
GAGGATGGCA GTCATCGTGA CCAGTTAGAT GAAGCGACTA AGGAACGAAT TGATACAGCC	1680
TATAAAGAAA TGAATGAACA TGTGGGATTG AAGTGGTATT AGCTTGAATC CAGAGGAAAG	1740
TAAATGATGA TTAAGGTAAT TGCGACAGAT ATGGATGGGA CCTTGCTGGA TGCTAGAGGT	1800
CAGCTTGATC TCCCACGATT GGAAAAGATT TTAGATCAGT TGGATCAAAG GGGCATTCGT	1860
TTTGTCATTG CGACGGCAA TGAAATTCAC CGCATGAGAC AACTACTGAG TCCCTTGGTG	1920
GATCGAGTGG TTCTGGTTGT TGCTAATGGC GCTCGTATTT TTGAAAACAA TGAATTGATT	1980
CAGGCTCAGA CATGGGATGA CGCCATTGTC AACAAAGGCTT TGAATCATT CAAGGGTCGA	2040
GCCTGTCAGG ACCAGTTTGT TGTAACGGGG ATGAAGGGTG ATTTTGTCAA GGAAGGTACG	2100
ATTTTACAG ATCTTGAAAG TTTTATGACT CCAGAAATGA TTGAAAAAT CTACCAACGG	2160
ATGCAATTG TGATGAATT AACATCTGAC CTCTTGGTG GTGTGCTCAA GATGAGCATG	2220
GTTGTTGGTG AGGAACGTTT GAGTTCGGTT TTGGAAGAAA TCAATGCTCT CTTTGATGGC	2280
CGTGTCCGAG CTGTATCCAG TGGCTATGGT TGCATTGATA TCCTCCAAGC TGGGATTCAT	2340
AAAGCATGGG GCTTGGAGGA ATTACTCAAG CGCTGGGACT TGAAATCCCA AGAAATCATG	2400
GCTTTTGGTG ATAGTGAAAA TGATGTTGAA ATGCTTGAAA TGGCTGGAAT TGCCTATGCG	2460
ATGGAAAATG CTGATGAGAA AGCCAAAGCT GTGGCGACTG CTCTAGCACC AGCCAACAGC	2520
CAAGGAGGAG TTTATCAAGT CTTGGAAAAC TGGTTAGAAA AAGGAGAATG AAGTGGCAGT	2580
ACAGTTATTA GAAAATGGC TCCTAAAGGA ACAAGAAAA ATTCAAATA AGTATCGTCA	2640
CCTAAATCAC ATTTCTGTTG TAGAACCAAA CATCTTTTT ATTGGGGATT CCATTGTGCA	2700
GTATTATCCT CTACAGGAGC TATTTGGGAC TTCAAAGACG ATTGTCAATC GAGGAATTCG	2760
TGGCTATCAG ACAGGACTGT TACTAGAGAA CCTTGATGCT CATCTATATG GTGGAGCAGT	2820
AGATAAAATT TTTCTCTGA TTGGGACAAA TGATATCGGA AAGGATGTTT CTGTGAATGA	2880
GGCTCTCAAT AATCTCGAAG CTATCATTCA ATCCGTTGCT CGCGATTATC CATTGACAGA	2940
GATTAAATTG CTTTCCATTT TGCCTGTCAA TGAGAGAGAG GAGTACCAGC AGGCAGTCTA	3000
TATCCGCTCG AATGAAAAA TTCAGAACTG GAATCAAGCC TATCAAGAGC TTGCATCTGC	3060
CTATATGCAG GTGGAATTTG TGCCAGTATT TGATTGTTTG ACAGACCAAG CAGGCCAACT	3120
CAAAAAAGAA TATACAACTG ATGGACTGCA CCTCAGTATT GCTGGTTATC AGGCTTTGTC	3180
AAAATCCTTG AAAGACTATC TTTACTAAAT AGCTAAATAA TGTAAATTT GAGCATAATA	3240

1034

TCTTGTA AAAA AATTCTA AAAA TCCTTTA AAAA TAAAAAGTGA CGGAGGAATT TATGAATGTA	3300
AATCAGATTG TACGGATTAT TCCTACTTTA AAAGCTAATA ATAGAAAATT AAATGAAACA	3360
TTTATATTG AAACCTTGG AATGAAGGCC TTGTTAGAAG AATCGGCCTT TCTGTCACTA	3420
GGTGACCAAA CGGGTCTTGA AAAGCTGGTT TTAGAAGAAG CTCCCAGTAT GCGTACTCGT	3480
AAGGTAGAGG GAAGAAAAA ACTAGCTAGA TTGATTGTCA AGGTGGAAAA TCCCTTAGAA	3540
ATTGAAGGAA TCTTATCTAA AACAGATTCG ATTCATCGAT TATATAAAGG TCAAAATGGC	3600
TACGCTTTTG AAATTTTCTC ACCAGAAGAT GATTTGATTT TGATTCATGC GGAAGATGAC	3660
ATAGCAAGTC TAGTAGAAGT AGGAGAAAAG CCTGAATTTT AAACAGATTT GGCATCAATT	3720
TCTTTAAGTA AATTTGAGAT TTCTATGGAA TTACATCTCC CAACTGATAT CGAAAGTTTC	3780
TTGGAATCAT CTGAAATTGG GGCATCCCTT GATTTTATT CAGCTCAGGG GCAGGATTTG	3840
ACTGTGGACA ATACGGTTAC CTGGGACTTA TCTATGCTCA AGTTCTTGGT CAATGAATTA	3900
GACATAGCAA GTCTTCGCCA GAAGTTTGAG TCTACTGAAT ATTTTATTCC TAAGTCTGAA	3960
AAATCTCTCC TTGGTAAAGA TAGAAATAAT GTTGAATTGT GGTTTGAAGA AGTATGAAGT	4020
GGACCAAGAT TATTA AAAA ATAGAAGAAC AAATCGAGGC AGGGATTTAT CCCGGAGCCT	4080
CTTTTGCGTA TTTTAAGGAC AATCAATGGA CAGAGTTCTA TTTAGGCCAG AGTGACCCAG	4140
AGCATGGCTT GCAGACTGAG GCAGGACTAG TTTATGACCT AGCTAGTGTC AGCAAGGTTG	4200
TTGGGGTTGG CACAGTTGT ACCTTCTTGT GGGAAATAGG TCAATTAGAT ATTGATAGAC	4260
TGTAATAGA TTTTTACCT GAGAGTGATT ATCCAGACAT CACTATTTCG CAGCTCTTGA	4320
CTCATGCAAC AGACCTTGAT CCTTTTATTC CTAATCGTGA TCTTTTAACA GCCCCTGAAT	4380
TAAAGGAAGC GATGTTTCAT CTCAACAGAC GAAGTCAGCC AGCCTTTCTT TATTCCGATG	4440
TCCATTTTTT GCTGTTGGGC TTTATTTTGG AAAGAATTTT TAATCAAGAT TTGGATGTGA	4500
TTTTAAAGGA TCAAGTCTGG AAACCTTGGG GAATGACGGA AACTAAGTTT GGGCCAGTTG	4560
AGCTTGCTGT TCCAACAGTT AGAGGTGTAG AGGCAGGCAT AGTGCATGAT CCCAAGGCTC	4620
GTCTCCTGGG TAGACATGCT GGGAGTGCTG GTTTATTTTC GACTATAAAG GATTTACAAA	4680
TCTTTTTAGA ACACTATTTA GCAGATGATT TTGCAAGAGA CTTAAATCAA AATTTTCTC	4740
CTTTGGATGA CAAGGAACGT TCTTTAGCAT GGAATTTGGA AGGAGATTGG CTAGACCATA	4800
CGGGCTATAC AGGTACCTTT ATCATGTGGA ATCGTCAGAA GCAAGAAGCC ACTATTTTCC	4860
TATCGAATCG TACCTATGAA AAGGACGAGA GAGCTCAATG GATATTAGAC CGCAATCAAG	4920
TGATGAACTT GATTGCAAAA GAAGAGTAAG GAGAGACATG TCAAATAGTT TAAAAGGGAC	4980
TTTACTAACA GTTGTGGCTG GTATTGCTTG GGGGTGTGCA GGAACGAGTG GCCAATACCT	5040

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AATGGCACAC GGAATTTTCGG CTCTGGTCTT GACTAACTTG CGTCTTTTAA TCGCTGGTGG	5100
AATTCTCATG CTCTGGGCTT ATGCTACTGC AAAGGATAAA ATACTGGTCT TTTTAAAGGA	5160
TAGAAAGAGT TTGCTGTCTC TTCTTATTTT TGCTCTGATT GGTCTTTTTC TCAACCAATT	5220
CGCCTATCTG TCTGCTATTC AGGAGACCAA TGCGGGAACA GCGACGGTGC TTCAGTATGT	5280
TTGTCTGTGC GGAATTTTAA TTTATAGCTG TATCAAGGAT AGGGTGGCAC CGACACTGGG	5340
AGAGATAGTT TCCATCATAT TCGCCATCGG AGGAACCTTC CTGATCGCAA CACATGGGCA	5400
GTTGGACCAG TTATCCATGA CACCTGCTGG TCTGTTCTGG GGTCTCTTTT CTGCCTTGAC	5460
TTATGCTCTG TATATCATTT TACCCATAGC CTTGATTAAA AAGTGGGGGA GCAGCTTGGT	5520
CATTGGTGTG GGAATGGTCA TAGCAGGTTT GGTGCGCCTT CCTTTTACAG GGGTTCTACA	5580
GGCCGATATC CCGACTAGTC TTGATTTTCT CCTTGCCTTT GCAGGCATTA TCCTTATCGG	5640
GACTGTCTTT GCCTATACAG CTTTCCTTAA AGGAGCCAGT CTGATAGGAC CGGTCAAGTC	5700
AAGCTTGTG GCTTCAATTG AGCCAATATC GGCGATTTTC TTTGCCTTCT TAATAATGAA	5760
TGAACAATTT TATCCCATTG ATTTTCTTGG TATGGCAATG ATATTGTTTG CTGTAACTTT	5820
GATTTCTTTG AAAGATTAT TCTTAGAAAA ATAAAAAGA CTCTTTGTCC GTGACAGAGA	5880
GTTTTTGCGT GGTAATCTAA TTATTTTCAA GATAAAATTC AAAGCGTTCG CCTACATATT	5940
GACTTTTTAC GTATTCAAAA GCAGTACCAT CTTCTAGGTA GGAAACCTGG GTCAATCCAA	6000
GAATAGCATG TCCTTTTCA ACTTCCAAAT AGTGGGCAAT CTTTTCTTTA GCAAGGCGAG	6060
CATAGATGGT CTGTTGAGAT TTGCCGATAC GATAGCCATG TTTTTCAGG GTTTGGAAGA	6120
AATGACTGGT GATTTCTTCT TTTTAAAGT CCTAATGAA TTTTTCAGGA ATAGAAGCAA	6180
CTTCATAAAC TAGGGGAAC TGGTCGGCAT AGCGGACCCG CTCCATTTCG ATAATATTGT	6240
CCGTTGGAAA AATTCCTAGC TTGGCAACTT CTGCTCATT GGAATGGTT TTTTGTAGG	6300
AAATGAGCTG GCTAGAGGGA ACTTTACCTT GGGATTTGAC AATTTTCAGTA AAAGTGGTTG	6360
TCCCTCGCAT CTTTCTTGT ACTCGAGTAC TGGAAACAAA GGTGCCGCTT CCTACACGGC	6420
GCTCTAAGAC GCCTTCTTCG ACTAATAGAG ATACGGCTTG GCGGAGGGTC ATGCGACTGA	6480
CCGCAAACTG CTCAGCTAAA TCTCTTTCAC TGGGAAGCCT CTCACCAATA GCCCAACGGT	6540
ACTCGTCAAT ATCCTTTTTT ATCTGATCAT GGATTTTAT ATAAGCAGGT AGCATATTTT	6600
TCACTTCATT TCTATCTTTT CTCTATTGTA CCCCATAAAA CTAGAAAAAG TCAAACTTCG	6660
CCTTGTTTAG TTGGTAATTC GCCCTTATTT GTGATAGAAT ATTGAGAAAA GATATTTCTT	6720
TTGAGAAAGG AAAAAGATGA GCAACATTTC AACTGATTG CAAGATGTAG AAAAAATCAT	6780

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CGTATTGGAC	TATGGTAGCC	AGTACAACCA	GCTGATTTCA	CGCCGTATCC	GTGAGATTGG	6840
TGTTTTTTCA	GAACATAAAA	GCCATAAAAT	TTCAGCTGCT	GAAGTTCGTG	AAGTCAATCC	6900
TGTAGGAATT	ATTCTATCAG	GTGGTCCAAA	TTCTGTATAT	GAAGATGGTT	CATTTGATAT	6960
TGACCCAGAA	ATCTTCGAAC	TCGGAATTCC	AATTTTGGGA	ATCTGTTATG	GTATGCAGTT	7020
ATTGACCCAT	AAACTTGGAG	GAAAAGTTGT	TCCTGCAGGT	GATGCTGGAA	ATCGTGAATA	7080
CGGTCAATCA	ACCCCTAACTC	ACACACCATC	AGCGCTTTT	GAATCAACAC	CTGATGAACA	7140
GACTGTTTTG	ATGAGCCATG	GTGATGCGGT	TACTGAGATT	CCTGCTGACT	TTGTTTCGTAC	7200
AGGTACATCA	GCTGACTGCC	CATACGCAGC	CATCGAAAAC	CCAGATAAAC	ACATTTACGG	7260
TATCCAATTC	CACCCAGAAG	TTTCGTATTC	TGTATACGGA	AATGATATCC	TTTCGTAACCT	7320
TGCCCTTAAC	ATTTGTAAAG	CTAAAGGTGA	CTGGTCAATG	GATAATTTCA	TTGACATGCA	7380
GATCAAAAAA	ATTCGTGAAA	CCGTCGGTGA	TAAACGTGTC	CTTCTTGGTC	TATCAGGTGG	7440
TGTTGACTCA	TCTGTCGTTG	GGGTTCTTCT	CCAAAAAGCG	ATTGGCGATC	AATTGATCTG	7500
TATCTTCGTA	GACCACGGTC	TTCTTCGTAA	AGGCGAAGCT	GATCAAGTTA	TGGACATGCT	7560
CGGTGGTAAG	TTTGGTTTGA	ATATCGTCAA	AGCAGACGCT	GCTAAACGTT	TCCTTGACAA	7620
ACTTGCTGGC	GTTTCTGACC	CTGAACAAAA	ACGTAAAAATC	ATCGGTAACG	AGTTTGTCTA	7680
TGTATTCGAT	GACGAAGCAA	GCAAGCTCAA	AGATGTGAAA	TTCTTGCTC	AAGGTACTTT	7740
ATATACAGAT	GTTATCGAGT	CTGGTACGGA	TACAGCTCAA	ACTATCAAGT	CACACCACAA	7800
CGTGGtGGTC	TTCCAGAAGA	TATGCAGTTT	GAATTGATTG	AACCACTCAA	TACTCTTTAC	7860
AAGGATGAAG	TTCGTGCTCT	TGGTACAGAG	CTTGGTATGC	CAGACCATAT	CGTATGGCGC	7920
CAACCATTC	CAGGACCAGG	ACTTGCTATC	CGTGTCTATG	GTGAAATCAC	TGAAGAGAAA	7980
CTTGAAACCG	TTCGTGAATC	AGACGCTATT	CTTCGTGAAG	AAATCGCTAA	AGCTGGACTT	8040
GACCGCGATA	TTTGGCAATA	CTTCACTGTT	AACACAGGCG	TTTCGTTCACT	CGGTGTTATG	8100
GGTGACGGTC	GTACGTATGA	CTACACGATT	GCAATCCGTG	CTATCACTTC	TATCGATGGT	8160
ATGACTGCTG	ATTTTGCCAA	AATTCCATGG	GAAGTACTTC	AAAAAATCTC	AGTACGTATC	8220
GTAAATGAAG	TGGATCATGT	TAACCGTATC	GTCTACGATA	TTACAAGTAA	ACCACCTGCA	8280
ACAGTTGAGT	GGGAATAATC	GCAAAAAAAT	TAAAAGCTTT	GTAAATCAA	CGGTTACAGA	8340
GGATTAAAAA	CTGTAACCTGG	GATTAAAAACG	GGAACATTTG	CTAAAAAGAA	TAAATTGAAT	8400
AATAGTTCCA	AGTGGTTTAC	ATTTGGACAA	AAAATTAGAC	CGTAGTTTTC	AAGCTGCGGT	8460
CTTTTGATAT	ATATAATGAG	AATTAATGGC	TCTTTGTCAA	CTGTAGTGGG	TTGAAGTCAG	8520
CTAAGCTCGA	GAAAGGACAA	ATTTTGTCT	TTCTTTTTTG	ATATTCAGAG	CGATAAAAAAT	8580

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CCGTTTTTTG AAGTTTTCAA AGTTCCGAAA ACCAAAGGCA TTGCGCTTGA TAAGTTTGAT	8640
GAGATTATTG GTCGCTTCCA ATTTGGCGTT AGAATAGTGT AGTTGAAGGG CGTTGACGAT	8700
TTTCTCTTTG TCCTTTAGAA AGGTTTTAAA GACAGTCTGA AAAAGAGGAT GAACCTGCTT	8760
TAGATTGTCC TCAATGAGTC CGAAAAATTT CTCCGGTTCC TTATTCTGAA AGTGAAACAG	8820
CAAGAGTTGA TAGAGCTGAT AGTGATGTTT CAAGTCTTGT GAATAGCTCA AAAGCTTGTT	8880
TAAAATCTCT TTATTGGTTA AATGCATACG AAAAGTAGGG CGATAAAAAT GTTTATCGCT	8940
GAGTTTACGA CTATCCTGTT GTATGAGCTT CCAGTAGCGC TTGATAGCCT TGTATTTCATG	9000
AGACTTTCGA TCCAATTGAT TCATGATTTG AACACGCACA CGACTCGG	9048

(2) INFORMATION FOR SEQ ID NO: 160:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 10399 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 160:

GTACCTTTAT TGATGAATGG ACTGTTTAAA TCAGTAGCAC GCCAACCAGA TATGCTTTCT	60
GAGTTTCGTA GTTTGATGTT TTTAGGTGTT GCCTTTATTG AAGGAACTTT CTTTGTAAC	120
CTTGCTCTCT CATTATTAT CAAATAAATA CATGGAACGA GAAGAAAAGG GAGGATTTTA	180
GATGGAAGAA AGTATTAATC CAATCATCTC TATTGGTCCT GTTATCTTCA ATCTGACTAT	240
GTTAGCCATG ACTTTGTTGA TTGTGGGAGT TATTTTTGTC TTTATTTATT GGGCAAGCCG	300
CAATATGACC TTGAAACCCA AAGGAAAGCA AAATGTACTT GAGTATGTCT ATGACTTTGT	360
TATTGGATTT ACAGAACCTA ACATTGGTTC GCGCTACATG AAAGATTACT CACTCTTTTT	420
CCTTTGTTTA TTCCTTTTCA TGGTGATTGC CAATAACCTT GGCTTAATGA CAAAGCTTCA	480
AACGATCGAT GGGACTAACT GGTGGAGTTC GCCAACCCTT AATTTACAGT ATGACTTAAC	540
CTTATCTTTT CTTGTCATTT TGTGACACA TATAGAAAGC GTTCGTCGTC GTGGATTTAA	600
AAAAAGTATA AAATCTTTTA TGAGTCCTGT TTTTGTCTA CCGATGAATA TCTTGGAAGA	660
ATTTACAAAC TTCTTATCTT TGGCTTTGCG GATTTTTGGG AATATCTTTG CAGGAGAGGT	720
CATGACGAGT TTGTTACTTC TTCTTTCCCA CCAAGCTATT TATTGGTATC CAGTAGCCTT	780
TGGAGCTAAT TTGGCTTGGA CTGCATTTTC TGTCTTTATT TCCTGCATCC AAGCTTATGT	840
TTTTACTCTT TTGACATCTG TGTATTTAGG GAATAAGATT AATATTGAAG AGGAATAGAA	900

1038

AGGAGTAACT GATGCACGTA ACAGTAGGTG AATTAATTGG TAATTTTATT TTAATCACTG	960
GCTCTTTTAT TCTTTTGCTA GTCTTGATTA AAAAATTGTC ATGGTCTAAT ATTACAGGCA	1020
TTTTCGAAGA AAGAGCTGAA AAAATTGCTT CAGATATTGA CAGAGCTGAA GAAGCCCGTC	1080
AAAAAGCAGA AGTATTGGCT CAAAAACGCG AAGATGAATT GGCTGGTAGC CGTAAAGAAG	1140
CTAAGACAAT CATTGAAAAT GCAAAGGAAA CAGCTGAGCA AAGTAAGGCT AATATCTTAG	1200
CAGATGCTAA ACTAGAAGCA GGACACTTAA AAGAAAAAGC CAATCAAGAA ATTGCTCAAA	1260
ATAAAGTAGA AGCTTTACAG AGTGTTAAGG GTGAGGTCGC AGATTTGACC ATCAGCTTAG	1320
CTGGTAAAT CATCTCACAA AACCTTGACA GTCATGCCCA TAAAGCACTC ATTGATCAGT	1380
ATATCGATCA GCTAGGAGAA GCTTAATGGA CAAGAAAACA GTAAAGGTAA TTGAAAAATA	1440
CAGCATGCCT TTTGTCCAAT TGGTACTTGA AAAAGGAGAA GAAGACCGTA TCTTTTCAGA	1500
CTTGACTCAA ATCAAGCAAG TTGTTGAAAA AACAGGTCTG CCTTCTTTT TAAAAAAGT	1560
GGCAGTAGAC GAGTCGGATA AGGAAAAAAC AATTGCTTTT TTCCAAGATT CTGTGTCGCC	1620
TTTATTACAA AACTTTATCC AGGTCTGCGC CTACAATCAC AGAGCAAATC TTTTTTATGA	1680
TGTGCTTGTA GATTGCTTGA ACCGACTTGA AAAAGAAACA AATCGATTG AAGTGACGAT	1740
TACGTCTGCT CATCCTCTAA CTGATGAACA GAAGACTCGT TTGCTCCCTT TGATTGAGAA	1800
AAAAATGTCT CTGAAAGTAA GGAGTGTAAG AGAACAAATC GATGAAAGTC TCATTGGTGG	1860
TTTTGTCAAT TTGCGCAATC ACAAGACAAT TGATGTGAGT ATTAAACAAC AACTTAAAGT	1920
TGTTAAAGAA AATTTGAAAT AGAAAGTGGT GTTCTTTTGG CAATTAACGC ACAAGAAATC	1980
AGCGCTTTAA TTAAGCAACA AATTGAAAAT TTCAAACCCA ATTTTGATGT GACTGAAACA	2040
GGTGTGTGTA CCTATATCGG GGACGGTATC GCGCGTGCTC ACGGCCTTGA AAATGTCATG	2100
AGTGGAGACT TGTGAATTT TGAAAACGGC TCTTATGGTA TGGCTCAAAA CTTGGAGTCA	2160
ACAGACGTTG GTATTATCAT CCTAGGTGAC TTTACAGATA TCCGTGAAGG CGATACAATC	2220
CGCCGTACAG GGAAAATCAT GGAAGTCCCT GTAGGTGAAA GTCTGATTGG TCGTGTGTG	2280
GATCCGCTTG GTCGTCCAGT TGACGGTCTT GGAGAAATCC AACTGATAA AACTCGTCCA	2340
GTAGAAGCAC CAGCTCCTGG TGTTATGCAA CGTAAGTCTG TTTCAGAACC ATTGCAAACT	2400
GGTTTGAAAG CTATTGACGC CCTTGACCG ATTGGTCGTG GTCAACGTGA GTTGATTATC	2460
GGTGACCGTC AGACAGGGAA AACAACCATT GCGATTGATA CAATCTTGAA CAAAAAGAT	2520
CAAGATATGA TCTGTATCTA CGTCGCGATT GGACAAAAAG AATCAACAGT TCGTACGCAA	2580
GTAGAAACAC TTCGTACGTA CGGTGCCTTG GACTACACAA TCGTTGTGAC AGCCTCTGCT	2640
TCACAACCAT CTCCATTGCT CTTCTAGCT CTTATGCTG GGGTTGCTAT GCGGAAGAA	2700

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TTTATGTATC AAGGTAAGCA TGTTTTGATT GTATACGATG ATCTATCAAA ACAAGCGGTA	2760
GCTTATCGTG AACTGTCGCT CTTGCTTCGT CGTCTCCAG GTCGTGAAGC CTTCCCAGGG	2820
GATGTTTTCT ATCTCCACAG CCGTTTGCTT GAGCGCTCAG CTAAAGTTTC TGATGAACTT	2880
GGTGGTGGAT CAATTACAGC CCTACCATT ATCGAGACAC AAGCAGGAGA TATCTCAGCC	2940
TATATCGCAA CCAACGTGAT TTCTATCACT GATGGACAAA TCTTCCTTGG CGATGGCCTC	3000
TTCAATGCAG GTATTCGTCC AGCCATCGAT GCGGGTTCAT CTGTATCTCG TGTAGGTGGT	3060
TCTGCACAAA TCAAAGCCAT GAAGAAGGTT GCTGGTACAC TTCGTATCGA CCTGCTTCA	3120
TACCGTGAGT TGGAAACCTT TACTAAGTTT GGTCTGACT TGGACGCAGC AACACAGGCT	3180
AAGTTGAACC GTGGACGTCG TACCGTTGAG GTCTTGAAAC AACCTGTTC CAAACCATTA	3240
CCTGTTGAGA AACAAGTAAC CATTCTTTAT GCTTTGACAC ATGGTTTCTT GGATACTGTT	3300
CCAGTAGATG ATATTGTTTCG TTTCGAGGAA GAGTTCATG CCTTCTTTGA TGCTCAACAT	3360
CCAGAGATTT TGGAAACCAT TCGTGATACA AAAGACTTGC CAGAAGAAGC AGTCTGGAT	3420
GCTGCGATTA CAGAGTTTCT CAATCAATCT AGCTTCCAAT AAGAATAGAG GTGTCAGATG	3480
GCAGTATCTC TAAATGATAT TAAAACAAAA ATCGCCTCAA CAAAAATAC GAGTCAAATC	3540
ACTAATGCCA TGCAAATGGT ATCGGCTGCT AAGCTAGGTC GTTCTGAAGA AGCTGCTCGC	3600
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GGAGCTGGTG CTTCAACTAA TCCGATGTTG ATTAGCCGTT CTGTGAAGAA GACAGGCTAT	3720
ATCGTTATCA CTTCAGACCG CGGTTTGTT GGAGGTTATA ATTCCTCTAT TTTGAAAGCT	3780
GTATGGAGT TGAAAGAAGA ATACCACCCA GACGGTAAAG GTTTTGAAAT GATCTGTATC	3840
GGTGGGATGG GAGCTGATTT CTTAAGGCT CGCGGTATTC AACCACTTTA TGAATTACGT	3900
GGCTTGTGAG ACCAACCTAG CTTTGATCAA GTTCGTAAGA TTATTTCAA AACTGTTGAA	3960
ATGTACCAA ATGAACCTT TGATGAGCTT TATGTTTGCT ACAACCACCA TGTCATACG	4020
CTAACCAGTC AAATGCGTGT GGAACAAATG CTTCCGATTG TTGACTTGGA TCCAAATGAA	4080
GCGGATGAAG AGTACAGCTT GACTTTTGAA TTGGAAACCA GCCGAGAAGA AATTCTGGAG	4140
CAGTTGTTGC CTCAGTTTGC AGAAAGTATG ATTTACGGTG CCATTATCGA TGCCAAGACA	4200
GCTGAGAATG CTGCGGCAT GACAGCCATG CAAACAGCGA CAGATAATGC TAAGAAAGTC	4260
ATCAATGATT TGACAATTCA GTATAACCGT GCCAGACAGG CGGCGATTAC ACAAGAAATT	4320
ACAGAAATCG TAGCAGGTGC TAGTGCCTTA GAATAGGCTC TAGTCCAGCT CGTATGAAAA	4380
TGAACCTAGG ACCTAGTTGA GCTAGGAACC GACAGTATCT TATATAGAAT AGGAGAAGGA	4440

1040

GATGAGTTCA GGTAAAATTG CTCAGGTTAT CGGTCCCGTT GTAGACGTTT TGTTTGCAGC	4500
AGGGGAAAAA CTTCTGAGA TTAACAATGC ACTTGTCGTC TACAAAAATG ACGAAAGAAA	4560
AACAAAAATC GTCCTGAAG TAGCCTTGA GTTAGGAGAT GGTATGGTTC GTACTATCGC	4620
CATGGAATCA ACAGATGGGT TGACTCGTGG AATGGAAGTA TTGGACACAG GTCGTCCAAT	4680
CTCTGTACCA GTAGGTAAAG AAACTTTGGG ACGTGCTTTC AACGTTTTGG GAGATACCAT	4740
TGACTTGGA GCTCCTTTTA CAGAAGACGC AGAGCGTCAG CCAATTCATA AAAAAGCTCC	4800
AACTTTTGAT GAGTTGTCTA CCTCTTCTGA AATCCTTGAA ACAGGGATCA AGGTTATTGA	4860
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TAAAACTGTC TTAATCCAAG AATTGATTCA CAACATTGCC CAAGAGCACG GTGGTATTTTC	4980
AGTATTTGCT GGTGTTGGGG AACGTACTCG TGAGGGGAAT GACCTTTACT GGGAAATGAA	5040
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AGGCCAAGAC GTGCTTCTCT TTATCGATAA TATCTTCCGT TTCACTCAGG CTGGTTCAGA	5220
AGTATCTGCC CTTTTGGGTC GTATGCCATC AGCCGTTGGT TACCAACCAA CACTTGCTAC	5280
GGAAATGGGT CAATTGCAAG AACGTATCAC ATCAACCAAG AAGGGTTCTG TAACCTCTAT	5340
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CTATGCAGTT GCTGCTGAAG TAAAACGTGT CCTTCAACGT TACCATGAAT TGCAAGATAT	5580
CATTGCTATC CTTGGTATGG ATGAGCTTTC TGATGAAGAA AAGACCTTGG TTGCTCGCGC	5640
CCGTCGTATC CAGTTCTTCT TGTCAAAAA CTTCAACGTT GCGGAACAAT TTA CTGGTCA	5700
GCCAGGTTCT TATGTTCCAG TTGCTGAAAC TGTACGTGGC TTAAAGGAAA TCCTTGATGG	5760
TAAATACGAC CACTTGCCAG AAGATGCCTT CCGTGGTGTA GGTCTATCG AAGATGTGAT	5820
TGCAAAAGCT GAAAAAATGG GATTTTAAGA GGTGATCTAT GGCTCAGTTA ACTGTCCAGA	5880
TCGTGACACC AGATGGTCTC GTCTATGATC ACCATGCCAG CTATGTATCG GTTCGAACTC	5940
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ATGAAGTAAA GGTAAAACGT ATCGATGATA AAGATCACGT GAACTGGATT GCAGTAAACG	6060
GTGGCGTTAT TGA AATTGCC AATGATATGA TCACAATCGT CGCTGACTCT GCAGAACGTG	6120
CTCGTGATAT CGATATCAGT CGTGCAGAAC GTGCCAACT TCGTGCAGAA CGTGCAATTG	6180
AAGAAGCACA AGACAAACAT TTGATTGACC AAGAACGTCG TGCTAAGATT GCTTTGCAAC	6240

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GTGCTATTAA CCGTATTAAT GTCGGAAATA GACTATAAGA AAAAATGAAC TTGAAAATAC	6300
CAAGTTCATT TTTTATGGTG TTTTAAGGAG CAAAACGGAT GCAGACTGCT TCGGGAACAT	6360
GGAAGTCGTT GGAGAGTTCT GCTAGACGAC CATTGTCACA ATTACGTTTA AAGACAGTTG	6420
CATTGTCAGA GTCTTGATGG ACAACAATGA GAAATTTTGT GTCGGGTGTC AAATCAAAAT	6480
CACGTGGAGT CTGACCATGC GTTGAACGA TTTCTAATAA CTCTAAGCTA CCGTCCGCAA	6540
GGATGGTATA TACTGCGATA GAATCATGGC CACGGTTAGA AGCGTAGAGG TATTTACCGT	6600
CTTTAGAGAG ATGAATAGCA GCGGTTCCAT TAAAGCCTTC GTAAGCTTCC GGTAAGTTG	6660
AAATGACCTG CATACGTTCA AATTCGCCAA CGCCATCGTA GATTAAAACT TCGATAGTAC	6720
TATTGAGTTC ACAAATGAGA TAAGCGATTT TATAGTGGTT ATGGAAAATG ATATGGCGTG	6780
AGCCTGCTCC TGGCTTGCTG TGATAGGTAT AGAGCTTAGA TAATTTTCCT TCTTGATCGA	6840
GGTCATAGGT GATGACTTGG TCAGTTCCCA AGTCGCAGGT CACTAGATAG TGGTCAGGTG	6900
TTAAATCTGT ATAGTGAACA TGGGGGAAG CTTGATTTTC ATGTGGACCT TGGCCACTGT	6960
GTTGATCCAT ATCACTAAGT AGAAGACTAC CATCTTCCTG GCGTTTATAA ACAAGGACTT	7020
GTCCCTTG TG ATAGTTAGCT GCGTAAACCA AATCACGCTT TTCATCGACA GCAACATAAC	7080
AGTGGGGAGC TCCTTCTTCA ACAACATGAT TTAACACAGT CCCGTCAGTT TGATAGGCTG	7140
CAATTCCTCC CTTATCGTCT TGGCTACCAA CAGTGTATAA ATGTTGGTGC TGGTCAAAGG	7200
CAAGGTAGGT TGGACTTGGC TCAGCTGCAA AAAGTTCTAG ATTTGAAAGC TGACCAGTTT	7260
CTGTATCAAA GTCTGCCTTG TAAATCCCTT GAGAAGTACG ACGTGTATAA GTTCCAAAAT	7320
AAACAGTTTC TTTCATTACT ATACCTCTGT GTAAAGATAA GACTATTATA TCACAAAAAC	7380
AAGTAAATTA AAGATATCCA ATTAGATGTA AGCACTTTAA AAAAGAGTTA TTTTGTTC	7440
AAAATGGTAT AATGAGAGAA CAATAGAAAG GAAGTATTTA TGGAGCAAAA AGAGAAACAT	7500
TTTAGCCTAT CTTGGTTTTT CAAGTGGTTT TTAGATAACA AGGCAATTAC GGTATTTTTA	7560
GTAACCTTAT TATTGGGACT GAATCTTTTT ATTTTAAGTA AGATTAGTTT TCTATTTTCA	7620
CCTGTTTTAG ACTTTTTAGC AGTTGTGATG TTGCCAGTCA TTTTGTCTGG TTTGTTATAT	7680
TATTTGTTGA ATCCTATTGT TGATGGATG GAGAAGCATA AGGTTAATCG TGTATAGCT	7740
ATCACTATTG TCTTTGTTAT CATCGCTCTC TTTATCATTT GGGGCTTGGC AGTCGCCATT	7800
CCAAATCTGC AACGTCAGGT TTTGACCTTT GCAAGAAACG TTCCTGTTTA CTAGAAGAT	7860
ATAGATAGGA TTGTTAATGG ATTGGTAGCC CAGCACCTGC CAGATGATTT CAGACCTCAA	7920
TTAGAGCAAG TTTTGACCAA TTTTCTAGC CAGGCTACAG TTTTGGCAAG TAAGGTTTCA	7980

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TCTCAGGCAG TCAACTGGGT GAGTGCCTTT ATTAGCGGGG CTTCTCAAGT GATTGTTGCC	8040
TTGATTATCG TTCCTTTCAT GCTCTTTTAT CTCTTGCGTG ATGGGAAAGG CTTGCCTAAC	8100
TATTTGACCC AATTCATTCC AAGAAAATTG AAGGAACCTG TTGGACAAGT TTTATCAGAT	8160
GTGAATCAAC AGTTGTCCAA CTATGTTCCA GGGCAAGTGA CAGTGGCTAT TATTGTAGCA	8220
GTAATGTTTA TCATCTTCTT CAAGATTATT GGTCTACGCT ATGCGGTTAC GCTGGGGGTT	8280
ACTGCTGGTA TTTTAAATCT GGTCCCTTAT CTTGGTAGCT TTCTAGCCAT GCTTCCTGCT	8340
CTAGTATTGG GTTTGATTGC TGGTCCAGTC ATGCTTTTGA AAGTAGTGAT TGTCTTTATC	8400
GTAGAACAAA CTATTGAAGG CCGTTTTGTC TCTCCATTGA TTTTGGGAAG TCAATTAAAC	8460
ATCCACCCTA TTAATGTTCT CTTTGTTTTG TTAACCTCAG GATCTATGTT TGGTATCTGG	8520
GGAGTTTAC TTGGTATTCC GGTTTATGCC TCTGCTAAGG TTGTCATTTC AGCCATTTTC	8580
GAATGGTATA AGGTAGTCAG TGGTCTATAT GAATTAGAGG GTGAGGAAGT CAAGAGTGAA	8640
CAATAGTCAA CAGATGTTAC AGGCTTTGGA GGAGCAAGAT TTAATAAGG CTGAGCATTA	8700
TTTCGCCAAA GCTTTAGAAA ATGATTCAAG TGATCTTCTG TATGAATTGG CAACTTATCT	8760
TGAAGGGATT GGTTCCTATC CTCAGGCCAA GGAAATTTAC CTGAAAATTG TAGAGGATTT	8820
TCCAGAGGTT CATCTTAATC TAGCTGCAAT TGCTAGCGAG GATGGTCAA TAGAAGAAGC	8880
CTTTACCTAT CTTGAGGAAA TCCAAGCTGA CAGTGACTGG TATGTCTCGT CTTTGGCTCT	8940
GAAGGCAGAC CTTTACCAGC TGGAAGGTTT GACAGATGTG GCACGTGAGA AATTATTGGA	9000
GGCCTTGACC TACTCAGAGG ATTCTCTCTT GATATTGGGT TTGGCAGAGT TGGATAGTGA	9060
GTTGGAATAT TACCAAGCGG CTATTCAAGC CTATGCCAG TTAGATAATC GCTCGATTTA	9120
TGAGCAAACG GGCATTTCCA CCTATCAACG AATTGGCTTT GCCTATGCTC AGTTAGGGAA	9180
ATTTGAAACG GCTACTGAGT TTTTAGAAAA AGCCCTGGAG TTAGAATACG ATGACTTAAC	9240
AGCTTTTGAG TTGGCCAGTC TTTATTTTGA TCAAGAAGAA TATCAAAAAG CCACCCTCTA	9300
CTTTAAGCAG CTTGATACCA TTTCTCCTGA CTTTGAAGGC TATGAGTATG GGTACAGTCA	9360
GGCTTTACAT AAGGAACATC AAGTTCAAGA AGCCCTGCGT ATCGCTAAGC AAGGATTAGA	9420
GAAAAATCCC TTTGAACTC GCCTCTTGCT AGCTGCTTCA CAATTTTCTT ATGAATTGCA	9480
TGATGCTAGT GGTGCAGAAA ATTATCTCCT TACTGCAAAA GAAGACGCTG AGGATACAGA	9540
AGAAATCTTG CTTGCTTTAG CCACTATTTA TCTGGAGCAG GAGCGTTATG AGGATATTCT	9600
AGAATTGCAG AGTGAGGAGC CAGAAAATCT TTTGACCAAG TGGATGATTG CTCGTTCTTA	9660
TCAAGAAATG GACGATTGG ATACTGCTTA TGAGTATTAT CAAGAGTTGA CAGGAGATTT	9720
GAAGGACAAT CCAGAAATTC TGGAACACTA TATCTATCTC TTGCGTGAAT TGGGACATTT	9780

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TGAAGAAGCA AAAGTCCATG CTCACACTTA CTTAAAACTG GTTCCAGATG ATGTGCAAAT	9840
GCAAGAAGCTG TTTGAGAGAT TGTAAGAATG TTTAACCCAA ATCATTTCATA CCTCTCTCAA	9900
CTAGATGTAA CTTACAAAAC CCCTGACCTC ATGAGCCACT TTCTTCCTCC TCATGAGGTC	9960
AGTTTTACTT TCTGCTGTTC CAGTATCGTT TTTCCCTCGCT AGATTTCCTC AAAAGGGCAG	10020
ACTCCTCCCT TGGTGCGTCA CACGATTTTT TCATCTCGAC TGTTCTTTAA TGCATCATTA	10080
ACGACGCTTT TCTTCTAGGT GGTTCATAAG GAACAGGAAG ATTCAGGTTG ACTTTTCTAA	10140
TCCTAGAATA AAGTGCTGAA AACAAATCGG AATAGGCATA GAGACTAGAC AATTTGAGGA	10200
GCTGCTTGCG TCCTGTTCGA ACACATTTTC CCACCACGTG AAGAAAAAGA TGGCGGAAGC	10260
GTTTGATTGT TAAAGTTTG AAGTCACCTC CAGCTAGATG TTTGAGAAAA AGATAGAGAT	10320
TGTAGCGCAT ACAGCTCATC ATCATACGAA TTCGTTTTTG ATTAAGGTTG AACTATCCGT	10380
TTTATCGCCA AAAAATCGG	10399

(2) INFORMATION FOR SEQ ID NO: 161:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 9409 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 161:

GATAAGATTA AGTTAGAAAA GAAAGAACTA GGACATATCT ACCAGATTCA GGTTTTTAAT	60
AGCTATGGGC AGGAAGAAAT CTATCGTGTG ATTTTGATGG AGACCAATAT TAGTTCGGTT	120
TCAACCAATA TCAAGTATGC TGCTGTCTTG ATTAATACCA GTCAGTTGGA ACAGGCTAGT	180
CAAAAGCATG AGCAATTGAT TGTGGTCGTG ATGGCTAGTT TCTGGATTTT GTCTTTACTT	240
GCCAGTCTCT ATCTAGCTAG GGTCAGTGTT AGGCCCTGC TTGAGAGTAT GCAGAAGCAA	300
CAGTCTTTTG TGGAAAATGC CAGTCATGAG TTACGAACTC CACTCGCAGT TTTGCAAAAT	360
CGCTTAGAGA CCTTTTTCG TAAGCCAGAA GCTACCATTA TGGATGTGAG CGAAAGCATT	420
GCATCGAGTT TGGAAAGAAGT CCGAAATATG CGTTTTTAA CGACAAGCTT GCTGAACTTA	480
GCTCGGAGAG ATGATGGGAT TAAGCCGGAG CTTGCAGAAG TTCCAAC TAG CTTTTTAAAT	540
ACAACTTTCA CAAACTACGA GATGATTGCT TCGGAAAATA ATCGTGCTT CCGTTTTGAA	600
AATCGTATCC ATCGAACAAT TGTCACAGAT CAGCTTCTTC TGAAACAAC TATGACCATT	660
CTTTTCGATA ATGCCGTCAA GTATACTGAG GAGGATGGTG AAATTGATTT TCTTATCTCG	720

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GCGACCGATC GCAATCTTTA TTTACTTGTT TCTGATAATG GAATCGGTAT TTCGACAGAA	780
GATAAAAAGA AAATTTTGA CCGTTTTTAT CGAGTAGACA AGGCTAGAAC CCGGCAAAAA	840
GGTGGTTTTG GTTTAGGATT ATCCCTAGCC AAGCAAATTG TAGATGCTCT AAAAGGAACT	900
GTTACTGTCA AAGATAATAA ACCCAAGGGA ACAATCTTTG AAGTGAAGAT TGCCATTGAG	960
ACACCATCTA AAAAGAAAAA ATAAAAATAT CGCTCCAATT GGGGCGATAT TTTGGATTTA	1020
TCTTCTACGT TTTCGTTGA TAATAGACCG TTGAACCTTT AAAACAAGTA AGCTGAATCC	1080
GATTGCTGCG GCAAAGGCAA GAGCAGTTGA TAATTTAAT GCTAAAAAGA TAAACTATAA	1140
GATAGCAATA CAGATACAAA AAACAGCGAT ATTAATAAAA AATAGGATTT CCTTGAGATT	1200
GGCATCAGAT TCGCTTCAG GTGTATAAGC TTGGTAATGA GGAAGCTGCT GGTTTAATTC	1260
TTCTTGATAG TCTACCTCAT AGGATTGTAA TTTTCTTACG GGCATGATTC TCTCCTTAAC	1320
AGTACATACC TATTTTATCA TTTTTCGGC AGAGAATTAT TACAGAAAGG TTACAAAAAG	1380
AATAAAGTCC CTTTTCATTT TCAAAGCATG GCTGATTTTG GAGAAATGTG GTATAATTTT	1440
TCTTATGGAA AAGATTGTCA TTACAGCAAC TGCTGAAAGT ATTGAACAAG TTGAACAACT	1500
ACTCGAAGCT GCGGTAGACC GTATCTATGT CCGTGAGAAA GATTTTGGTC TTCGTCTGCC	1560
AACGACCTTT AGTTATGACC AATTACGTGA AATCGCTAAG TTGGTTCATG ATGCTGGTAA	1620
GGAATTGATC GTTGCAGTCA ATGCTCTCAT GCACCAAGAT ATGATGGACC GTATCAAGCC	1680
TTTCTTAAAC TTCTTGGAAG AAATCAAGAC AGACTATATT ACGATTGGGG ATGCAGGCGT	1740
CTTTTACGTA GTTAACCGCG ATGGTTATTC ATTTAAGACC ATCTACGATG CTTCAACCAT	1800
GGTAACTAGC AGTCGTCAGA TTAACCTCTG GGGACAAAAG GCTGGCGCAT CTGAGGCTGT	1860
TTTGGCGCGT GAAATTCCAT CAGCTGAACT TTTCAAAATG CCAGAGATTT TGGAAATTC	1920
TGCTGAAGTT TTGGTTTACG GTGCTAGCGT CATCCATCAT TCTAAACGTC CACTCTTGCA	1980
AACTACTAT AACTTTACAC ATATCGATGA TGAAAAGACG CATAAACGTG ACCTCTTCTT	2040
GGCTGAGCCA AGTGATCCAG AGAGCCACTA TTCCATTTTT GAAGATAATC ATGGGACCCA	2100
TATCTTTGCC AACAATGACC TTGATTTGAT GATCAAATTA ACAGAATTGG TGGAGCATGG	2160
CTTTACTCGC TGGAACTAG AAGGGCTCTA CACTCCTGGT CAGAACTTTG TTGAGATTGC	2220
AAAACCTTT ATCCAAGCGC GTAGCTTGAT TCAAGAGGGC AACTTTAGTC ATGCTCAAGC	2280
CTTCTTGCTG GATGAAGAAG TTCGTAAACT TCACCCTAAA AACCGTTTCC TTGATACAGG	2340
ATTTTATGAC TACGATCCTG ACATGGTTAG ATAAAATACA TGATTGCTTG AGAGAAGGAA	2400
GATGCAAACA TTTCTTCTCT CAATTTTTCG TATTTCTTCA CTATTTTACA AAAATCAGCA	2460
GGCTAGAATG CTCTATTCGA TGGGATTTTT AAGAAAAGTA GTGTCTTGA GTTTGAAAAT	2520

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TATCCTATGT TTGCAGGTGC CAAATGGCCC TTTTGTGGT ATAATTTTTT ATAATGAAAA	2580
CGATTGGTAA TCGCTATGTT GTGGTGGATT TAGAGGCAAC TAGCACAGGT AGTAAGGCTA	2640
AAATTATCCA AGTGGGAATT GTCGTGATTG AGGACGGAGA AATCGTCGAT CACTATACGA	2700
CGGATGTCAA TCCACATGAA CCCTTGGATG CTCATATCAA AGAACTGACA GGATTGACAG	2760
ACCAACGTCT GCGCAAGCA CCTGATTTTT CGCAAGTGC CAGAAAAATA TTTGACTTGG	2820
TGGAGGATGG GATTTTGTGA GCCCATAATG TTCAGTTTGA TGCTAATCTC TTGGCGGAAA	2880
ATTTATTTTT TGAAGCTAT GAGCTAAGAA ACCCTCGTGT TGATACGGTC GAATTGGCCC	2940
AGGTCTTTTT CCCTGAACTG GAAAAATATA GCTTGCCGAT TTTGTGTCTGA GAATTAGGAA	3000
TTCTCTTAA ACACGCACAC ACAGCCCTTT CAGATGCCA AGCTACAGCA GAATTACTTC	3060
TTTTTTTACG GAAAAAGATG ACCCAGCTTC CTAAAGGTCT CTTGGAACGC TTGCTGGAAA	3120
TGGCTGACGC TCTCCTATAT GAGTCTACC TGGTTATTGA GGAACTTAT CGCAACCAAT	3180
CTATCCTGAG TTCTCCAGAC TTGGTCCAAG TTCAAGGTCT ATATTTTAAG AAAACGGAAG	3240
CTTCTCTGGA GCCACGAAAA CTATCTCAAG ACTTTTCTAA AAATATTCT CTGTTGAACC	3300
TTGAAGTGAG GGAGGAACAA GAAAGTTTG CTAAAGAGGT TGGCTTGCTA TTGAAAGATG	3360
AACCTGTCTC TCTGATTCAA GCGCCGACAG GGATTGGGAA AACCTATGGC TATCTCTTAC	3420
CCGCTTTATC TCAATCCAAA GAGCGACAAA TTGTTCTTAG TGTTCCGACA AAGATTCTTC	3480
AAAATCAAAT CATGGAAGAA GAAGGTAAAC GCCTCAAGGA AGTGTTCAT ACAGATATTC	3540
ATAGCTTAAA GGGACCACAA AATTATCTGA AGTTGGATGC CTTTTATCAT TCCTTGCAGG	3600
AAAATGATGA AAATCGCTTA TTTAGACGCT TTAAAATGCA AGTCTTGGTC TGGCTTACTG	3660
AGACAGAGAC AGGAGATTTG GATGAAATCG GGCAACTCTA CCGTTACCAA CATTTTCTAG	3720
CAGACCTTCG TCATGATGGG AATTATCAT CCCAGAGCTT ATTTGTGACG GAAGATTTTT	3780
GGAAACGTAG TCAAGAAAGG GCAGAGACTT GCAAGCTTTT AGTGACTAAT CATGCCTATC	3840
TCGTAACCAAG ACTTGAAGAT AATCCTGAAT TTGTCAGTGA CCGTTTACTG ATTATTGATG	3900
AAGTCCAAAA GATTTTGTGA GCTCTAGAAA ATCTGCTTCA AGAGACCTAC GATATACAAT	3960
CTATTATCGA TTTAATTGAT AAGGCTTTAG TAGGAGAAGA AAACAGGGTT CAACAACGGA	4020
TACTAGAAAG TATTCGCTTT GAGTGTCTCT ACTTGATAGA ACAATTTCAG TCTGGCAAAT	4080
CTAGGAAAAA TATCTTAGAT TCTCTGGACA ATCTCCATCA GTATTTTCA GAATTGGAAG	4140
TAGAAGACTT TGATGAGCTG GTTCGCTATT TTACAGCTGA AGGTGATTAC TGGCTTGAAG	4200
TAACTGAAAC GAGTCAAAAG AAAATTCAGA TTTCTTCTAC AAAATCAGGC CGTACTCTTC	4260

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TGTCCTCTTT	ACTTCCTGAG	AGTTGCCAAG	TCTTGGGAGT	ATCGGCTACT	CTTGAGATTA	4320
GTCAGAGGGT	TTCTTTGGCA	GACCTTTTAG	GCTATCCTGA	AGCTAAATTT	GTCAAGATTG	4380
AATCTCGGGG	AAAACAGGAA	CAAGAAGTGG	TCATGGTCAA	AGATTTCCCT	CTGGTAACAG	4440
AAACCTCCTT	AGAAGTCTAT	GCCAGAGAGG	TAGCTGCTTT	ACTAGTGGAA	ATTCAAGCTT	4500
TCCAGCAACC	GATTTTGGTT	CTCTTTACCG	CTAAAGACAT	GCTTCTAGCA	GTATCGGATT	4560
TACTTACAGT	TAGCCACTTG	GCCCAGTATA	AAAATGGGGA	TGTTCATCAG	CTAAAGAAAC	4620
GCTTTGAAAA	AGGTGAACAA	CAAATCTTGC	TTGGTGCAGC	AAGTTTCTGG	GAGGGAGTTG	4680
ATTTTTC AAG	CCATCCTTCT	GTGATTCAAG	TTGTACCGAG	GCTTCCTTTC	CAAAATCCTC	4740
AAGAACCCTT	GACGAAAAAG	ATTAATCAAG	AACTGAATCA	AGAAGGGAAA	AATGCCTTTT	4800
ATGATTATCA	ATTGCCAATG	GCCATTATTC	GTTTAAAACA	GGCTTTGGGA	AGAAGTATGA	4860
GACGTGAATA	CCAACGTTC	TTAACTCTTA	TTTTGGATAG	GAGAATCGTC	GGAAAACGAT	4920
ACGGCAAACA	AATAGTAGCA	TCTCTAGCAG	AAGAAGCGAC	TGTTAAAACC	ATCTCTCGAT	4980
CCGAAGTTGA	CGAGGCTATT	GATAGATTTT	TTAATGAGCT	TTGATAAATA	GTATTGTATG	5040
AAAGTATAAG	GTTAGTATAT	ATGAAACGTT	CTCTCGACTC	AAGAGTCGAT	TACAGTTTGC	5100
TCTTGCCAGT	ATTTTTTCTA	CTGGTCATCG	GTGTGGTGGC	TATCTATATA	GCCGTTAGTC	5160
ATGATTATCC	CAATAATATT	CTGCCCATTT	TAGGGCAGCA	GGTCGCCTGG	ATTGCCTTGG	5220
GGCTTGATGAT	TGGTTTTGTG	GTCATGCTCT	TTAATACAGA	ATTTCTTTGG	AAGGTGACCC	5280
CCTTCTATA	TATTTTAGGC	TTGGGACTTA	TGATCTTGCC	GATTGTATTT	TATAATCCAA	5340
GCTTAGTTGC	ATCAACGGGT	GCCAAAACT	GGGTATCAAT	AAATGGAATT	ACCCTATTCC	5400
AACCGTCAGA	ATTTATGAAG	ATATCCTATA	TCCTCATGTT	GGCTCGTGTC	ATTGTCCAAT	5460
TTACAAAGAA	ACATAAGGAA	TGGAGACGCA	CGGTCCGCT	GGACTTTTTC	TTAATTTTCT	5520
GGATGATCT	CTTTACCATT	CCAGTCCTAG	TTCTTTTAGC	ACTTCAAAGT	GACTTGGGGA	5580
CGGCTTTGGT	TTTTGTAGCC	ATTTTCTCAG	GAATCGTTTT	ATTATCAGGG	GTTTCTTGGA	5640
AAATTATTAT	CCCAGTATTT	GTGACTGCTG	TAACAGGAGT	TGCTGGTTTC	TTAGCTATCT	5700
TTATTAGCAA	GGACGGACGA	GCTTTTCTTC	ACCAGATTGG	AATGCCGACC	TACCAAATTA	5760
ATCGGATTTT	GGCTTGCTC	AATCCCTTTG	AGTTTGCCCA	AACAACGACT	TACCAGCAGG	5820
CTCAAGGGCA	GATTGCCATT	GGGAGTGGTG	GCTTATTTGG	TCAGGGATT	AATGCTTCGA	5880
ATCTGCTTAT	CCCAGTTCGA	GAGTCAGATA	TGATTTTAC	GGTATTGCA	GAAGATTTTG	5940
GCTTTATTGG	CTCTGTCCTG	GTTATTGCCC	TCTATCTCAT	GTTGATTTAC	CGTATGTTGA	6000
AGATTACTCT	TAAATCAAAT	AACCAGTTCT	ACACTTATAT	TTCCACAGGT	TTGATTATGA	6060

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TGTTGCTCTT CCACATCTTT GAGAATATCG GTGCTGTGAC TGGACTACTT CCTTTGACGG	6120
GGATTCCCTT GCCTTTCATT TCGCAAGGGG GATCAGCTAT TATCAGTAAT CTGATTGGTG	6180
TTGGTTTGCT TTTATCGATG AGTTACCAGA CTAATCTAGC TGAAGAAAAG AGCGGAAAAG	6240
TCCCATTCAA ACGGAAAAAG GTTGTATTAA AACAAATTAA ATAAGGAGAA AATCATGGTA	6300
AAAGTAGCAG TTATATTAGC TCAGGGCTTT GAAGAAATTG AAGCCTTGAC AGTTGTAGAT	6360
GTCTTGCCTC GAGCCAATAT CACATGTGAT ATGGTTGGTT TTGAAGAGCA AGTAACGGGT	6420
TCGCATGCAA TCCAAGTAAG AGCAGATCAT GTCTTTGATG GAGATTTATC AGACTATGAT	6480
ATGATTGTTT TCCTGGAGG TATGCCTGGT TCTGCACATT TACGTGATAA TCAGACCTTG	6540
ATTCAAGAAT TGCAAAGCTT CGAGCAAGAA GGAAGAAAC TAGCAGCCAT TTGTGCGGCA	6600
CCAATTGCCC TCAATCAAGC AGAGATATTG AAAATAAGC GATACACTTG TTATGACGGC	6660
GTTCAGAGC AAATCCTTGA TGGTCACTAC GTCAAGGAAA CAGTAGTGGT AGATGGTCAG	6720
TTGACAACCA GTCGGGTCC TTCAACAGCC CTTGCCTTTG CCTACGAGTT GGTGGAGCAA	6780
CTAGGAGGGG ACGCAGAGAG TTTACGAACA GGAATGCTCT ATCGAGATGT CTTTGGTAAA	6840
AATCAGTAAA ACGGGAGTTA TTCTCTCGTT TTTTATGTGG AAAACTCAGG GAAATCATCG	6900
CTTTTTTCAT AAAAAATGC TATAATGAAG GGTATGAAAT ATCAGATTA CATCTGGGAT	6960
TTAGGTGGAA CTTTACTGGA TAATTATGAA ACTTCAACAG CTGCATTTGT TGAAACATTG	7020
GCACTGTATG GTATCACACA AGACCATGAC AGTGTCTATC AAGCTTTAAA GGTTTCTACT	7080
CCTTTTGCGA TTGAGACATT CGCTCCCAAT TTAGAGAATT TTTTAGAAAA GTACAAGGAA	7140
AATGAAGCCA GAGAGCTTGA ACACCCGATT TTATTGAAG GAGTTTCTGA CCTATTGGAA	7200
GACATTTCAA ATCAAGGTGG CCGTCATTTT TTGGTCTCTC ATCGAAATGA TCAGGTTTGT	7260
GAAATTTTAG AAAAAACCTC TATAGCAGCT TATTTTACAG AAGTGGTGAC TTCTAGCTCA	7320
GGCTTTAAGA GAAAGCCAAA TCCCGAATCC ATGCTTTATT TAAGAGAAAA GTATCAGATT	7380
AGCTCTGGTC TTGTCAATTG TGATCGGCCG ATTGATATCG AAGCAGGTCA AGCTGCAGGA	7440
CTTGATACCC ACTTGTTTAC CAGTATCGTG AATTTAAGAC AAGTATTAGA CATATAAGAA	7500
AAAGGAATAA GATGACAGAA GAAATCAAAA ATCTGCAGGC ACAGGATTAT GATGCCAGTC	7560
AAATTCAAGT TTTAGAGGGC TTAGAGGCTG TTCGTATGCG TCCAGGGATG TACATTGGAT	7620
CAACCTCAAA AGAAGGTCTT CACCATCTAG TCTGGGAAAT TGTTGATAAC TCAATTGACG	7680
AGGCCTTGGC AGGATTTGCC AGCCATATTC AAGTTTTTAT TGAGCCAGAT GATTCGATTA	7740
CTGTTGTGGA TGATGGGCGT GGTATCCCAG TCGATATTCA GGAAAAACA GGCCGTCCTG	7800

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CTGTTGAGAC CGTCTTTACA GTCCTTCACG CTGGAGGAAA GTTCGGCGGT GGTGGATACA	7860
AGGTTTCAGG TGGTCTTCAC GGGGTGGGGT CGTCAGTAGT TAATGCCCTT TCCACTCAAT	7920
TAGACGTTCA TGTTACAAA AATGGTAAGA TTCATTACCA AGAATACCGT CGTGGTCATG	7980
TTGTCGCAGA TCTTGAAATA GTTGGAGATA CGGATAAAAC AGGAACAAC TTTCACTTCA	8040
CACCGGACCC AAAAATCTTC ACTGAAACAA CAATCTTTGA TTTTGATAAA TTAAATAAAC	8100
GGATTCAAGA GTTGGCCTTT CTAAATCGCG GTCTTCAAAT TTCAATTACA GATAAGCGCC	8160
AAGGTTTGGA ACAAACCAAG CATTATCATT ATGAAGGTGG GATTGCTAGT TACGTTGAAT	8220
ATATCAACGA GAACAAGGAT GTAATCTTTG ATACACCAAT CTATACAGAC GGTGAGATGG	8280
ATGATATCAC AGTTGAGGTA GCCATGCAGT ACACAAC TGG TTACCATGAA AATGTCATGA	8340
GTTTCGCCAA TAATATTCAT ACCCATGAAG GTGGAACACA TGAACAAGGT TTCCGTACAG	8400
CCTTGACACG TGTTATCAAC GATTATGCTC GTAAAAATAA GTTACTGAAA GACAATGAAG	8460
ATAATTTAAC AGGGGAAGAT GTTCGCGAAG GCTTAACTGC AGTTATCTCA GTTAAACACC	8520
CAAATCCACA GTTTGAAGGA CAAACCAAGA CCAAATTGGG AAATAGCGAA GTGGTCAAGA	8580
TTACCAATCG CCTCTTCAGT GAAGCTTTCT CCGATTTCCT CATGGAAAAT CCACAGATTG	8640
CCAAACGTAT CGTAGAAAAA GGAATTTTGG CTGCCAAGGC TCGTGTGGCT GCCAAGCGTG	8700
CGCGTGAAGT CACACGTAAA AAATCTGGTT TGGAAATTTT CAACCTTCCA GGGAACTAG	8760
CAGACTGTTT TTTAATAAC CCTGCTGAAA CAGAACTCTT CATCGTCGAA GGAGACTCAG	8820
CTGGTGGATC AGCCAAATCT GGTGTAACC GTGAGTTTCA GGCTATCCTT CCAATTCGCG	8880
GTAAGATTTT GAACGTTGAA AAAGCAAGTA TGGATAAGAT TCTAGCCAAC GAAGAAATTC	8940
GTAGTCTTTT CACAGCCATG GGAACAGGAT TTGGCGCAGA ATTTGATGTT TCGAAAGCCC	9000
GTTACCAAAA ACTCGTTTTG ATGACCGATG CCGATGTCGA TGGAGCCAC ATTCTGTACCC	9060
TTCTTTTAAC CTTGATTAT CTTTATATGA AACCAATCCT AGAAGCTGGT TATGTTTATA	9120
TTGCCCAACC ACCAATCTAT GGTGTCAAGG TTGGAAGCGA GATTAAAGAA TATATCCAGC	9180
CGGGTGCAGA TCAAGAAATC AAACCTCAAG AAGCTTTAGC CCGTTATAGT GAAGGTCGTA	9240
CCAAACCGAC TATTCAGCGT TATAAGGGG TAGGTGAAAT GGACGATCAT CAGCTGTGGG	9300
AAACAACCAT GGATCCCGAA CATCGCTTGA TGGCTAGAGT TTCTGTAGAT GATGTGCAGA	9360
AGCAGATAAA ATCTTTGATA TGTTGATGGG GATCGAGTTG TCCTCGTCG	9409

(2) INFORMATION FOR SEQ ID NO: 162:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 6415 base pairs
 - (B) TYPE: nucleic acid

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(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 162:

CCTGGGAAAG TCTTGAAAAT TATGATAGAA TGGTGAAGG AAAAATTCAG GAGAGTAGTA	60
GTGACTCAAA ATGTTGAAAG TCTTCTCGTA TCCATTGTAA TCAGTGCATA CAATGAAGAA	120
AAATATCTGC CTGGTCTAAT TGAAGACTTA AAAAATCAAA CCTATCCTAA AGAGGATATT	180
GAAATTCTAT TTATAAATGC TATGTCCACA GATGGGACCA CAGCTATCAT TCAGCAATTT	240
ATAAAGGAAG ATACAGAGTT TAACTCAATT AGATTGTATA ACAATCCTAA GAAAAATCAA	300
GCTAGTGGTT TTAACCTGGG AGTTAAACAT TCTGTAGGGG ACCTTATTTT AAAAATTGAT	360
GCTCATTCAA AAGTTACTGA GACTTTTGTA ATGAACAATG TGGCTATTAT TCAACAAGGT	420
GAATTTGTCT GTGGGGGGCC TAGACCGACG ATTGTGGAAG GAAAAGGAAA ATGGGCAGAG	480
ACCTTGCATC TTGTTGAGGA AAATATGTTT GGCAGTAGCA TTGCCAATTA TCGAAATAGT	540
TCTGAGGATA GATATGTTTC TTCTATTTT CATGGAATGT ATAAACGAGA GGTTTCCAG	600
AAGGTTGGTT TAGTAAATGA GCAACTTGGC CGAACTGAAG ATAATGATAT TCATTATAGA	660
ATTCGAGAAT ATGGTTATAA AATCCGCTAT AGCCCAAGTA TTCTATCTTA TCAGTATATT	720
CGACCAACAT TCAAGAAAAT GCTGCATCAA AAGTATTCAA ATGGTTGTG GATTGGCTTG	780
ACAAGTCATG TTCAGTTTAA GTGTTTATCA TTATTTCACT ATGTTCCCTG TTTATTTGTT	840
TTGAGTCTTG TGTTAGTCT AGCATTGTTA CCGATCACAT TCGTATTCAT AACTTTACTA	900
TTAGGTGCCT ATTTTCTACT TTTGTCATTA CTCACTTTGC TGACTTTATT AAACATAAA	960
AATGGATTTC TAATTGTGAT GCCCTTTATT TTATTTTCCA TTCACTTTGC TTATGGCCTT	1020
GGGACGATTG TAGGTTTAAT TAGAGGATTT AAATGGAAGA AGGAGTACAA GAGAACAATA	1080
ATTTATTTGG ATAAAATAAG CCAAATAAAT CAAAATATGC TATAATAACA ATATAGTAAA	1140
ACTCTTTTAA GGAGGAGTAG ATTTCTATGA ATAAAAAAT AACAGATTAT GTGATTGATC	1200
TGGTGGAAAT TTAAATAAAA CAACAAAAGC AGGTTTCTG GGAATATTT GATATTTTCA	1260
GTATGGTGGT TTCCATCATT GTATCTTATA TTTTATTTTA TGGGCTGATT AATCCAGCAC	1320
CTGTTGACTA CATTATCTAT ACGAGTTTGG CCTTCCTGTT CTATCAATTG ATGATTGGTT	1380
TTTGGGGGTT GAACGCGAGC ATTAGTCGTT ACAGCAAGAT TACGGATTTC ATGAAAATCT	1440
TTTTTGGTGT GACTGCTAGC AGTGTCTTGT CATATAGTAT CTGTTATGCC TTCTTGCCAC	1500
TCTTCTCCAT CCGTTTCATC ATTCTCTTTA TCTTGTGAG TACCTTCTTG ATTTTATTCG	1560

1050

CACGGATTAC TTGGCAGTTA ATCTACTCCA GACGCAAAAA AGGTAGTGGT GATGGAGAAC	1620
ACCGTCGGAC CTTCTTGATT GGTGCCGGTG ATGGTGGGGC TCTTTTATG GATAGTTACC	1680
AACATCCAAC CAGTGAATTA GAACTGGTCG GTATTTTGA TAAGGATTCT AAGAAAAAGG	1740
GTCAAAAAC TGGTGGTATT CCTGTTTGG GCTCTTATGA CAATCTGCCT GAATTAGCCA	1800
AACGCCATCA AATCGAGCGT GTCATCGTTG CGATTCCGTC GCTGGATCCG TCAGAATATG	1860
AGCGTATCTT GCAGATGTGT AATAAGCTGG GTGTCAAATG TTACAAGATG CCTAAGGTTG	1920
AAACTGTGTG TCAGGGCCTT CACCAAGCAG GTACTGGCTT CAAAAAATT GATATTACGG	1980
ACCTTTTGGG TCGTCAGGAA ATCCGTCTTG ACGAATCGCG TCTGGGTGCA GAACTGACAG	2040
GTAAGACCAT CTTAGTCACA GGAGCTGGAG GTTCAATCGG TTCTGAAATC TGTCGTCAAG	2100
TTAGTCGCTT CAATCCTGAA CGCATTGTCT TGCTCGGTCA TGGGGAAAAC TCAATCTACC	2160
TTGTTTATCA TGAATTGATT CGTAAGTTCC AAGGGATTGA TTATGTACCT GTGATTGCGG	2220
ACATTCAAGA CTATGATCGT TTGTGCAAG TCTTTGAGCA GTACAAACCT GCTATTGTTT	2280
ATCATGCGGC AGCCCAAG CATGTTCTTA TGATGGAGCG CAATCCAAA GAAGCCTTCA	2340
AAAACAATAT CCGTGGAAC TACAATGTTG CTAAGGCTGT TGATGAAGCT AAAGTGCTA	2400
AGATGGTTAT GATTTCGACA GATAAGGCAG TCAATCCACC AAATGTTATG GGAGCAACCA	2460
AGCGCGTGGC GGAGTTGATT GTCACTGGCT TTAACCAACG TAGCCAATCA ACCTACTGTG	2520
CAGTTCGTTT TGGGAATGTT CTTGGTAGCC GTGGTAGTGT CATTCCAGTC TTTGAACGTC	2580
AGATTGCTGA AGGTGGGCCT GTAACGGTGA CAGACTCCG TATGACCCGT TACTTTATGA	2640
CCATTCCAGA AGCTAGCCGT CTGGTTATCC ATGCTGGTGC TTATGCCAAA GATGGGGAAG	2700
TCTTTATCCT TGATATGGGC AAACCAGTCA AGATTTATGA CTTGGCCAAG AAGATGGTGC	2760
TTCTAAGTGG CCACACTGAA AGTGAAATTC CAATCGTTGA AGTTGGAATC CGCCAGGTG	2820
AAAACTCTA CGAAGAACTC TTGGTATCAA CCGAACTCGT TGATAATCAA GTTATGGATA	2880
AGATTTTCGT TGGTAAGGTT AATGTCATGC CTTAGAATC CATCAATCAA AAGATTGGAG	2940
AGTTCCGCAC TCTCAGTGA GATGAGTTGA AGCAAGCTAT TATCGCCTTT GCTAATCAA	3000
CAACCCACAT TGAATAAAAA AGAAAAACGC ATAGTATCAA GTTACACAAC CTTGGTAATA	3060
TGCGTTTTAT TATGTAGAGA CTTATACTCT TCGAAAATCT CTTCAAACCA CGTCAACGTC	3120
GCCTTGCCGT ATATGGTTAC TGACTtCGTC AGTTCTATCC ACAACCTCAA AACAGTGTTT	3180
TGAGyGACT TCGTCAGTTC TATCCACAAC CTCAAAACAG TGTTTtGAGc TGAcTTCGTC	3240
AGTTCTATCC ACAACCTCAA AACAGTGTTT TGAGCTGAcT TCGTCAGTTC CATCCACAAC	3300
CTTAAACAG TGTTTtGAGy TGACnTTCGT CAGTTCCATC TACAACCTTA AACAGTGTT	3360

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TTGAGCTGCC CGCAGCTAGT TTCCTAGTTT GCTCTTTGAT TTTCATTGAG TATTACTTCA	3420
TTTTCTTCTG AAATGGAATT GTTACCCAGT CTATGCTATT GAAAATACGC CAAAACCTCT	3480
AAGGGTTTGT GAGCGATATA ATCAGGTTGA TAGTTTAGTA GATCTGCTTG CTCTCCAAAT	3540
CCCCAAGTGA TGGCCAATTT CTGAATACCT GTTCTCTGAG CTCCCAGCAT ATCAAACCTG	3600
GTATCTCCGA TGATGATGGC TTGTCTGGT GCTAGTTGAT GTGTCTGCAA GGCTTGGTGA	3660
ATGACATCTG CCTTATGGGG TGCTTCAGGG CTAGAACCAT AAATGCCATC AAAGAAATGA	3720
TGGATTTCCA AGTTTCTTGC CATGTCTTGA GCAGTAGATG TATCCTTTGT CGTGGTGATG	3780
TAGAGTGAT AACTGCTCGA TAACTCCTCA AGCAAGTCTA TAATCTGAGG AAAGAGTTGA	3840
GCTTCATAGA TGCCTTTTGC CTTATAGTAA GAACGATATA TCTGCACGGC TTCAGAAATT	3900
TGGTCTTTGG ACAGGCAGGT CGCAAACTA CTTTCGAGAG GTGGTCCCAT AAAACCACGA	3960
ATAGTTTGG CATCAGGGCT AGGCACCCCC AGCTCTTTAA AGGTATAGGT AAAGGCATTG	4020
TGAATCCCGA TAGAACTATC AACGAGGGTT CCATCCAAAT CGAAAAAAT CGCTGTGATA	4080
GAGGTCATGG TTTCTCCTAT TTGATAAGCT TATTCTCCGA AAATTTCTTT TTGGAGGCGA	4140
CGACCAGTAG GGGTGGTAGC GAGTCCACCT TCAGCTGTTT CACGAAAGGC AGTTGGCATG	4200
CTTGCTCCTA CTTGGTACAT GGCATCGATC ACTTCATCCA CAGGGATTTT AGATTCGATA	4260
CCTGCCAAGG CCATGTCTGC TCGATGAAA GCAAAGCTAG CTCCCATGGC ATTACGTTTG	4320
ACACAGGGAA CTTGACCAA ACCTGCAACA GGGTCACAGA TGAGGCCTAG CATATTTTTA	4380
ATGACAAAGG CAATAGCTTG ACTGGCCTGA TAAGGTGTTT CACCTGCAGC CAGAGTCAAG	4440
GCGGCAGCAC TCATAGCAGA GGCTGAACCA ACTTCAGCTT GACACCCACC CTCAGCACCT	4500
GAGATGGAGG CATTGTCTGC GATGACTAGT CCAAAGGCAC CAGCAGCAA GAGGAAATCC	4560
AATGTGTGCT CGTGGCTGAG GTCTAATTTT TCAATAGCAG CAGTGAGAAC GGATGGCAGA	4620
CAGCCAGCAC TTCCAGCGGT TGGAGTGGA CAGACCAAGC CCATTTTGGC ATTGTGTTCA	4680
TTGACTGCCA TGGCATTTTC GGCAGCCGAG AGAATCGTAT AATCTGACAG AGTTTTTCCG	4740
TTTTCGATGT AGTGATCCAA TTTGGCAGCA TCTCCACCTG TCAGGCCACT ACGAGATTTA	4800
TTTTCATTGA GGCCAAGTTG GACAGAGGCT TTCATAACTT CCAGATTGCG TTCCATGAGA	4860
AGGAAGACTT CTTACAGTTC GCGACCGGTC AATTCAAACCT CTGTTGTAAT CATGAGTTCT	4920
GCGACATTTT CTTGAAAGTC CAGATCTGCT TGCTCGACCA ATTCTTTGAT AGAATAAAAC	4980
ATGCTTCCTC CTATTTAAAG AAATTGACAT TGTGGAGATG AGGGATTTT CGAATTTCTT	5040
CGATAGCCTC ATCACAGTTG CGACTGTCAA CTTGATAAT CATAATGGCT TTTTCACCAG	5100

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CTTTTTCACG AGTGACATTC ATCTGGGCGA TATTGATACC ATAGCGGGAA AGCGCCTCTG	5160
TAACAAGGGC AATCATACCT GGAATATCTT GATGAACGAT GATGATAGTC GGTGTATTCA	5220
TATTGAGAGA GACGGCAAAA CCATTGAGTT CGGTTACCTG AATATTTCCCT CCACCGATAG	5280
AAATACCAGT CACGCTGATG GTCTTGTGGG CATTMTTAAC AGTAATTTTA GTGGTGTAG	5340
GGTGAGGGGC ATTGCTGTCT TTCTGAATGG TCCAGACAAT CTTGATACCA CGCTTGTGGG	5400
CAATTTCCAG ACTATTTGGA ATTTTCAGGAT CATCTGTATC CATTCCCTAAA ATACCTGCAA	5460
CAAGGGCTAG GTCTGTTCCT TGACCACGAT AGGTCTTGGC AAATGAGTTA AAAAGTTGGA	5520
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CACCAGCGGT ATGGCTACTA GATGGGCCAA TCATAACTGG TCCGATGATA TCAAAGACAG	5640
ATTGAAAACG AAGTGATTTC ATCAGTTTCC CCTTATAAAA ATTCTTATCT CTATTATATC	5700
AAAGAATGAG GGGCTTGCT TTAATTGTGG ATGAAAACCT TTCTAATACC TCAAATAGCA	5760
TAAAAATAGT ATCTTTTATG ACAAAAAACA CCTTATTTAG GGAAATAAAA AATAATTTTG	5820
TAATATTTCT ACATAAAAGT GTCAAGAAAC GGTAATATTT AAAGGGTATG ATAGAACTAT	5880
AGAAAGAAGG AGAATTTTCG AATATGAAAT CAATAACTAA AAAGATTAAA GCAACTCTTG	5940
CAGGAGTAGC TGCCTTGTTT GCAGTATTTG CTCCATCATT TGTATCTGCT CAAGAATCAT	6000
CAACTTACAC TGTTAAAGAA GGTGATACAC TTTTCAGAAAT CGCTGAAACT CACAACACAA	6060
CAGTTGAAAA ATTGGCAGAA AACAACCACA TTGATAACAT TCATTTGATT TATGTTGATC	6120
AAGAGTTGGT TATCGATGGC CCTGTAGCGC CTGTTGCAAC ACCAGCGCCA GCTACTTATG	6180
CGGCACCAGC CGCTCAAGAT GAACTGTTT CAGCTCCAGT AGCAGAACT CCAGTAGTAA	6240
GTGAAACAGT TGTTTCAACT GTAAGCGGAT CTGAAGCAGA AGCCAAAGAA TGGATCGCTC	6300
AAAAAGAATC AGGTGGTAGT ATACAGCTAC AAATGGACGT TATATCGGAC GTTACCAATT	6360
AACAGATTCA TACCTGAACG GTGACTACTC AGCTGAAAAC CAAGAACGGG TACCG	6415

(2) INFORMATION FOR SEQ ID NO: 163:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8494 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 163:

TACCCCTTTC GAATTTTGGC AAAAATTCGG TAAGGCTTTG ATGGTAGTTA TCGCGGTTAT	60
GCCGGCTGCT GGTTTGATGA TTTCAATCGG TAAGTCTATC GTGATGATTA ACCCAACCTT	120

1053

TGCACCACTT GTCATCACAG GTGGAATTCT TGAGCAAATC GGTGGGGGG TTATCGGTAA	180
CCTTCACATT TTGTTTGCCC TAGCCATTGG AGGAAGCTGG GCTAAAGAAC GTGCTGGTGG	240
TGCTTTGCGC GCTGGTCTTG CCTTCATCTT GATTAAACCGT ATCACTGGTA CAATCTTTGG	300
TGTATCAGGC GATATGTTGA AAAATCCAGA TGCTATGGTA ACTACTTTCT TTGGTGGTTC	360
AATCAAAGTT GCTGATTACT TTATCAGTGT TCTTGAAGCT CCAGCCTTGA ACATGGGGGT	420
ATTCGTAGGG ATTATCTCAG GTTTTGTAGG GGCAACTGCT TACAACAAAT ACTACAACCT	480
CCGTAAACTT CCTGATGCAC TTTCATTCTT CAACGGGAAA CGTTTCGTAC CATTGTAGT	540
TATTCTTCGT TCAGCAATCG CTGCAATTCT ACTTGCTGCT TTCTGGCCAG TAGTTCAAAC	600
AGGTATCAAT AACTTCGGTA TCTGGATTGC CAACTCACAA GAACTGCTC CAATCTTGC	660
ACCATTCTTG TATGGTACTT TGAACGTTT GCTCTTGCCA TTTGGTCTTC ACCACATGTT	720
GAATATCCCA ATGAATAACA CAGCTCTTGG TGGTACTTAT GACATTTTAA CTGGTGCAGC	780
TAAAGGTACT CAAGTATTCG GTCAAGACCC ACTATGGCTT GCATGGGTAA CAGACCTTGT	840
AAACCTTAAA GGTACTGATG CTAGTCAATA TCAACACTTG TTAGATACAG TACATCCAGC	900
TCGTTTCAAA GTTGGACAAA TGATCGGTTC ATTCGGTATC TTGATGGGTG TGATTGTTGC	960
TATCTACCGT AATGTTGATG CTGACAAGAA ACATAAATAC AAAGGTATGA TGATTGCAAC	1020
AGCTCTTGCA ACATTCTTGA CAGGGGTAC TGAACCAATC GAATACATGT TCATGTTTAT	1080
CGCAACACCT ATGTATCTTG TTTACTCACT TGTTCAAGGT GCTGCCTTCG CTATGGCTGA	1140
CGTCGTAAAC CTACGTATGC ACTCATTCGG TTCAATCGAG TTCTTGACTC GTACACCTAT	1200
TGCAATCAGT GCTGGTATTG GTATGGATAT CGTTAACTTC GTTTGGGTAA CTGTTCTCTT	1260
TGCTGTAATC ATGTACTTTA TCGCAAACCT CATGATTCAA AAATCAACT ACGCAACTCC	1320
AGGGCGCAAC GGAAACTACG AAAGTGTGA AGGTTAGAA GAAACAGCA GCGAAGTGAA	1380
AGTTGCAGCA GGCTCTCAAG CTGTAAACAT TATCAACCTT CTTGGTGGAC GTGTAAACAT	1440
CGTTGATGTT GATGCATGTA TGAATCGTCT TCGTGTAAT GTTAAAGATG CAGATAAAGT	1500
AGGAAATGCA GAGCAATGGA AAGCAGAAGG AGCTATGGGT CTTGTCATGA AAGGACAAGG	1560
GGTTCAAGCT ATCTACGGTC CAAAAGCTGA CATTTTGAAA TCTGATATCC AAGATATCCT	1620
TGATTACAGT GAAATCATTC CTGAACTCT TCCAAGCCAA ATGACTGAAG CACAACAAA	1680
CACTGTTTCAc TTCAAAGATC TTAAGTGAAG AGTTTACTCA GTAGCAGACG GTCAAGTTGT	1740
TGCTTTGGAA CAAGTAAAGG ATCCAGTATT TGCTCAAAAA ATGATGGGTG ATGGATTGTC	1800
AGTAGAACCT GCAAATGGAA ACATTGTATC TCCAGTTTCA GGTACTGTGT CAAGCATCTT	1860

1054

CCCAACAAAA CATGCTTTTG GTATTGTGAC GGAAGCAGGT CTTGAAGTAT TGGTTCACAT	1920
TGGTTTGGAC ACAGTAAGTC TTGAAGGTAA ACCATTTACA GTTCATGTTG CTGAAGGACA	1980
AAAAGTTGCA GCAGGAGATC TCCTTGTCAC AGCTGACTTG GATGCTATCC GTGCAGCAGG	2040
ACGTGAAACT TCAACAGTAG TTGTCTTCAC AAATGGTGAT GCAATTAAAT CAGTTAAGTT	2100
AGAAAAACA GGTTCCTCTG CAGCTAAAAC AGCAGTTGCT AAAGTAGAAT TGTAATATAC	2160
TTGAGGTTGG AAGCTGTATT CCAACCTCTT ATTTTGGGAG AAAAGAATGA AATTTTAAAC	2220
ACTCAATACT CACAGTTGGA TGGAGAAAGA AGCAGAGGAA AAATTCCAGA TTTTGCTTGA	2280
AGATATTCTT GAAAAGGACT ATGATTTGAT TTGTTTTCAA GAAATCAATC AGGAGATGAC	2340
CTCGTCAGAG GTGGAGGTTA ATGACCTTTA TCAAGCTTTG CCAGCAGCTG AGCCTATTCA	2400
CCAAGACCAT TATGTTAGAC TCTTGTTGA AAAGTTGTCT GAGCAAGGA AAAATTACTA	2460
CTGGACCTGG GCCTATAACC ATATCGGCTA TAACCGCTAC CACGAAGGTG TGGCTATCTT	2520
GTCTAAAACA CCTATTGAAG CCAGAGAAAT TTTGGTTTCA GATGTGGATG ATCCAACAGA	2580
CTATCATACT CGCCGTGTTG CCCTAGCTGA AACTGTAGTC GATGGCAAGG AGCTAGCAGT	2640
TGCCAGTGTT CATCTCTCTT GGTGGGATAA AGGTTTCCAA GAAGAATGGG CACGATTTGA	2700
GGCTGTCTTG AAAAAATTGA ACAAGCCACT TTTACTAGCT GGAGATTTC ACAATCCGGC	2760
TGGACAGGAA GGTTACCAAG CTATTTTAGC TAGTCCATTA GGCTTACAAG ACGCATTTGA	2820
AGTTGCTCAA GAGAAAAGTG GTAGCTATAC TGTTCGCCT GAAATTGATG GCTGGAAAGG	2880
GAACACTGAA CCCCTTCGAA TCGATTATGT CTTTACTACC AAAGAGTTAG CGGTGGAAAA	2940
TTTACATGTC GTATTTGATG GTAACAAGAG TCCACAAGTG AGTGATCACT ATGGCTTGAA	3000
TGCTATATTA AACTGGAAAT AATAACTGAA AAGAGGTTGG AACTATAAAA TTCCAGCCTT	3060
TTCTTACTAG AGAAGCTACT GGAAATAGCC TAAATAAGTG AGACTACTGT AATGGAATAA	3120
AATATGGTAT AATTGATAAG GTAGATAGAA TCGAGGATGT TATGTCATTT ACGAAATTTT	3180
AATTTAAAAA CTATATTAGA GAAGCCTTGA AGGAGTTAAA ATTTACAACT CCAACAGAGG	3240
TGCAAGACAA GTTGATTCCCT ATTGTTTTGG CAGGTCGTGA CCTAGTAGGA GAATCAAAAA	3300
CAGGTTCAAG TAAGACTCAT ACTTCTTGT TACCGATTTT CCAGCAATTA GATGAAGCTA	3360
GCGATAGTGT ACAAGCAGTG ATTACTGCAC CGAGTCGTGA GTTGGCTACT CAAATTTACC	3420
AAGTAGCGCG TCAGATTTCA GCTCACTCAG ATGTCGAAGT TCGTGTGGTT AATTATGTGG	3480
GTGGTACGGA TAAGGCTCGC CAGATTGAGA AATTGGCAAG CAATCAGCCT CATATTGTTA	3540
TTGGAACACC AGGCCGTATC TACGACTTGG TTAATCTGG TGATTTAGCT ATTCATAAAG	3600
CCAAGACATT TGTGTGTGAT GAAGCAGATA TGACCTTGGA TATGGGATTC TTGGAAACTG	3660

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TTGATAAGAT TGCTGGCAGT CTTCACAAAAG ACTTGCAATT CATGGTCTTC TCAGCGACTA	3720
TCCCACAAAA ACTGCAACCA TTCTTGAAAA AATACTTATC AAATCCTGTT ATGGAGAAAA	3780
TTAAGACCAA AACGGTTATT TCTGACACCA TTGATAATTG GTTGATTTTCG ACCAAGGGAC	3840
ATGATAAGAA TGCTCAAATT TACCAAGTTGA CTCAGTTGAT GCAGCCGTAT TTGGCAATGA	3900
TTTTTGTTAA CACTAAAACG CGTGCTGATG AATTGCATTG ATATCTGACT GCTCAAGGCT	3960
TGAAGGTTGC AAAAATCCAT GGCGATATTG CCCCTCGTGA ACGCAAGCGA ATCATGAATC	4020
AGGTGCAAAA TCTGGATTTT GAGTATATTG TCGCAACAGA TTTGGCAGCG CGTGGGATTG	4080
ACATTGAAGG TGTCAGCCAT GTCATCAATG ATGCCATTCC GCAAGACTTA TCTTTTMTTG	4140
TTCATCGTGT TGTCGCTACT GGACGAAATG GCCTACCAGG TACAGCTATT ACCCTTTATC	4200
AGCCAAGTGA TGACTCGGAT ATCCGTGAGT TGGAGAAATT GGGAATCAAG TTTAGTCCTA	4260
AGATGGTCAA AGACGGGGAA TTTCAAGATA CCTATGACCG TGATCGTCGT GCCAACCGTG	4320
AGAAAAACA AGATAAACTT GATATCGAAA TGATTGGTTT GGTAAAAAG AAAAAGAAAA	4380
AAGTCAAACC GGGTTATAAG AAGAAAATTC AATGGGCGGT TGATGAAAAG CGCCGTAAAA	4440
CCAAGCGTGC TGAATAATCGC GCTCGCGGTC GTGCAGAGCG TAAAGCTAAA CGCCAAACAT	4500
TTTAATAGAA ATGTGTGGAG TATTGAGCTC CAACTTTTTT ATTTATGAGA ACGAACTATC	4560
TAAACCGAAA CACTACATTA AAGACTGCAA ATTGCGATTA AAAATGGTAT AATGATAAAG	4620
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ACGTCTGAAT CTGTATCTGA GGGGCATCCG GATAAGATTG CAGACCAAAT TTCAGATGCG	4800
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TATACTGGTT CTGTCCACGT TTTTGGTGAA ATTTCTACAA ATGCCTATGT GGATATTAAAC	4920
CGTGTGGTTC GTGATACCAT TGCAGAGATT GGTATATACCA ATACAGAATA TGGATTTTCT	4980
GCTGAGACGG TGGGAGTACA CCCATCTTTG GTGGAACAAT CTCCTGACAT CGCTCAAGGT	5040
GTTAACGAAG CCTTGGAGGT TCGTGGAAAT GCTGATCAAG ATCCACTGGA CTTGATTGGA	5100
GCAGGTGACC AAGGGCTCAT GTTTGGATTT GCAGTAGATG AAACAGAAGA GCTTATGCCA	5160
TTGCCAATTG CACTCAGTCA TAAATTGGTT CGTCGTCTGG CAGAACTTCG TAAGTCTGGA	5220
GAAATTAGCT ATCTCCGTCC AGATGCAAAA TCACAAGTTA CAGTTGAGTA CGATGAAAAT	5280
GACCGTCCGG TACGTGTAGA TACAGTCGTT ATTTCTACTC AGCATGATCC AGAGGCCACT	5340
AATGAACAAA TCCATCAAGA TGTGATTGAC AAGGTCATCA AAGAAGTTAT TCCATCTTCT	5400

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TATCTTGATG ATAAGACAAA ATTCTTTATC AATCCGACAG GTCGTTTTGT AATCGGTGGT	5460
CCTCAAGGGG ACTCAGGTTT GACTGGTCGT AAGATTATTG TAGATACTTA TGGTGGCTAC	5520
TCTCGTCATG GTGGTGGTGC CTTCTCTGGT AAAGATGCGA CTAAGGTGGA TCGTTCAGCC	5580
TCTTATGCGG CTCGCTATAT TGCCAAGAAT ATCGTTGCAG CAGACCTTGC TAAGAAGGCA	5640
GAAGTGCAGT TGGCCTATGC TATCGGTGTT GCGCAACCTG TTTCTGTTCG TATCGATACT	5700
TTCCGTACAG GAACAGTAGC TGAAAGTCAA CTTGAAAAAG CGGCTCGTCA AATCTTTGAC	5760
CTTCGCCCTG CAGGGATTAT CCAAATGCTG GACCTCAAGC GTCCAATTTA CCGTCAAACA	5820
TCGGCTTACG GTCACATGGG ACGTACAGAT ATTGATCTTC CATGGGAACG TTTGGATAAG	5880
GTAGATGCTT TGAAAGAAGC AGTAAAATAA GATTTTAAGA GGGGAACGTC CTCTCTTTTT	5940
TATAGTTTTT AACTATACTG GGATACTGTT CTGAAAAATCC ATTTTGCAGG AGTAGAGATT	6000
TACATGTATA GTAGATTGAA ACTAGAATAG TACACCTCAA CTTCTAAAAC ATTGTTAGCA	6060
ATCAATTGTA CTGTCCTGAT CGATTCTCC TGTTCTTGTT TCATTTTACT ATATTTCTTT	6120
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AAAGTTTTAT TCGTTATCAC TTGACTATTG CAAGGTTTTT TAGAGCAACA GAGTCATGGA	6240
ATGGACTCAT GGTGAGATT TCTCCTTGTT GCTTGGACTT CATTCAAAAG TCTGTTACCC	6300
AAGCCTTGTT CAAACTTCTA ATACACTAGC TGTTTCCATA GCATGACTTC TGTACTAGAC	6360
TTTCTTTTCC GAATAAATAG ATAGAACCAC AGAATCTAGT AAACCTAGAA TTAAAATTAT	6420
GGTATAATAT TAGCAATAAA AGAAATCTGG AGGATTAGAA TCATGGTATC AACGAAAACA	6480
CAAATTGCTG GTTTTGAGTT TGACAATTGC TTGATGAATG CAGCAGGTGT GGCTTGTATG	6540
ACGATAGAGG AGTTAGAAGA GGTCAAAAAC TCAGCGGCAG GAACCTTTGT TACTAAGACA	6600
GCGACCTTGG ACTTCCGTCA GGGGAATCCT GAGCCACGCT ACCAAGATGT TCCACTTGGT	6660
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GAGGAAACCC ATACTATTTT GAAAAAAGTC CAAGAGAGTG ATTTTCGTGG TCTGACTGAG	6840
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ACAGACCGGA TTTTGGCAGA AGTGTTTGCT TACTTCACCA AACCTCTTGG AATTAAATTG	6960
CCACCTTATT TTGATATTGT TCACTTTGAC CAAGCGGCAG CTATTTTCAA CAAATATCCG	7020
CTCAAGTTTG TCAACTGCGT TAACTCTATC GGAAACGGCC TCTATATAGA AGACGAATCT	7080
GTCGTTATTC GGCCTAAGAA TGGTTTTGGT GGAATTGGTG GAGAATACAT CAAACCGACT	7140
GCTTTAGCCA ATGTTACGCG CTTTATCAA CGTTTAAATC CTCAAATCCA AATTATCGGA	7200

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ACAGGTGGCG TTCTGACTGG TCGAGATGCC TTTGAACACA TCCTCTGTGG AGCAAGTATG	7260
GTGCAGGTGG GAACGACCCT TCACAAAGAA GGCCTCAGTG CTTTGTACCG CATTACCAAT	7320
GAACTGAAAG CAATCATGGT GGAAAAAGGC TACGAGAGCT TAGAAGATT T CCGTGGGAAA	7380
TTGCGCTATA TTGACTAAAT TAAATCGAAA AATCTGAAGA AAGGAGAGAC GATGCTAGCC	7440
ATTGAAGAAA GTCAGAAGTT GACTTTATCA AATTTACCGA GCCTGAGCCT ATTTACAGGG	7500
ACAGATCAGG GTCAGTTTGA AGTGATGAAG AGTCAAATGT TGAAACAGAT TGGGTATGAT	7560
TCTGCTGACC TCAACTTTGC CTACTTTGAT ATGAAAGAAG TAGTTTACAA GGATGTGGAA	7620
CTGGAGTTGG TCAGCCTTCC TTTCTTTGCG GATGAGAAAA TCGTGATATT AGATTATTTT	7680
ATGGATATCA CGACTGCTAA GAAACGCTTT TTGACAGATG ATGAGCTTAA GTCATTTGAG	7740
GAATACCTTG ACAATCCTTC TCCAACAACC AAGTTGATAA TCTTTGCAGA AGGAAAGCTG	7800
GATAGCAAAA GACGGTTAGT CAAATTACTT AAGCGTGATG CCAAGGCCTT CGATGCAGTA	7860
GAAGTAAAAG AACAAGAATT GCGCCAGTAC TTCCAAAAGT GGAGTCAGAA ACAAGGTCTG	7920
CAGTTTACCA ATCATTCCTT TGAAAACTC CTCATCAAGT CGGGGTTTCA ATTTAGCGAA	7980
ATCCAGAAAA ATCTTCTCTT TTTACAGTCC TATAAGGCGA ATTCTGTTAT TGAGGAAGAG	8040
GATATTGTTA ACGCAATTCC CAAGACTTGC AGGACAATAT TTTTGATTTA ACTCAGTTTA	8100
TTCTGACTAA AAAGATGGAT CAGGCGCGCG ATTTGGTGAG AGACTTGACC TTGCAAGGGG	8160
AAGATGAAAT CAAACTGATT GCAGTCATGC TGGGACAATT TCGGACTTTT ACTCAGGTGA	8220
AGATTTTGGC GGAGTCTGGC CAAACAGAAT CGCAGATTGC AAGTAGTTTA GGTAGTTATC	8280
TGGGACGTAA CCCAAATCCT TATCAAATCA AGTTTGCAAT AAGAGATTCG AGAGGACTTT	8340
CTTTGAGCTT TTTGAAGCAA GCTATTCCT ATTTGATTGA GACAGACTAT CAGATTAAGA	8400
CAGGTCCTTA TGAAAAAGGT TTCCTTTTGG AAAAGGCACT CTTACAGATT GCTAGTCAGG	8460
TCAATTGACA TTTGTTGAAA CTACTAACCC GCGG	8494

(2) INFORMATION FOR SEQ ID NO: 164:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 9707 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 164:

CCGGTCAGTT CGTTCAGTAC AAGGAATCAT AATGAACGAT CAATCAGAAA AAAAGACTAG	60
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AAAGAAGACT GTATGGATAA TCGACCAATT GGTTTTTTGG ATTCGGGTGT CGGGGGCTTG	120
ACCGTTGTGC GCGAGCTCAT GCGCCAGCTT CCCCATGAAG AAATCGTCTA TATTGGAGAT	180
TCGGCGCGGG CGCCCTATGG CCCCCGTCCT GCTGAGCAAA TTCGTGAATA TACTTGCCAG	240
CTGGTCAACT TTCTCTTGAC CAAGGATGTC AAAATGATTG TCATTGCTTG TAACACTGCG	300
ACTGCGGTGC TCTGGGAAGA AATCAAGGCT CAACTAGATA TTCCTGTCTT GGTGTAATT	360
TTGCCAGGAG CTTCGGCAGC CATCAAGTCC AGTCAAGGTG GGAAAATCGG AGTGATTGGA	420
ACGCCCATGA CGGTACAATC AGACATATAC CGTCAGAAAA TCCATGATCT GGATCCCCGAC	480
TTACAGGTGG AGAGCTTGGC CTGTCCCAAG TTTGCTCCCT TGGTTGAGTC AGGTGCCCTG	540
TCAACCACTG TTACCAAGAA GGTGGTCTAT GAAACCTGC GTCCCTTGGT TGGAAAGGTG	600
GATAGCCTGA TTTTGGGCTG TACTCATTAT CCACTCCTTC GCCCTATTAT CCAAAATGTG	660
ATGGGGCCAA AGGTTCACT CATCGATAGT GGGGCAGAGT GCGTACGGGA TATCTCAGTC	720
TTACTCAATT ATTTTGAAAT CAATCGTGGT CGCGATGCTG GACCACTCCA TCACCGTTT	780
TACACAACAG CCAGTAGCCA AAGTTTGA CAATTTGGT AAGAATGGCT GGAAAAGAG	840
ATTCATGTGG AGCATGTAGA ATTATGACAA ATAAAATTTA TGAATATAAG GATGACCAGG	900
ACTGGTATGT TGGGTCTTAT AGTATTTTGT GTGGCGTTAA CAGTTTGAGC GACTATAAGA	960
CAGATTTTCC TCTGTTTGA TTCTCCAAAA TATTTGGAGA TGAAGAGTAT GGTTCCTCCG	1020
TTTCAGTTAC TGTTTTACGC TATGGTTCTA TCTACCGTTT GTTCTCCTTT GTGGTAGACA	1080
TGCTTAATCA AGAAATGGGA CGAACTTGG AAGTTATTCA ACGTCATGGG GCCCTGCTCT	1140
TGTTTGAAAA TGGGCAACTC TTGTATGTAG AATTGCCTAA AGAAGGGGTC AATGTTTCATG	1200
ATTTCTTTGA GACAAGCAAG GTCAGAGAAA CCTTGTGAT TGGCACTCGT AACGAAGTA	1260
AAACCAAGGA ATTCCGAGCT ATCTTTGATA AGTTAGGCTA CGATGTGGAA AATCTTAATG	1320
ACTACCTGA CCTGCCTGAA GTAGCAGAAA CAGGTATGAC CTTTGAAGAA AATGCCCGCC	1380
TTAAGGCAGA AACCATTCT CAATTAACGG GCAAGATGGT TTTGGCAGAT GATTCTGGTC	1440
TCAAAGTCGA TGTCTTGGT GGCTTACCAG GCGTCTGGTC AGCTCGTTTC GCAGGTGTGG	1500
GAGCAACTGA CCGTGAAAAT AATGCCAAAC TCTTGACGA ATTGGCCATG GTCCTTGAAC	1560
TCAAGGACCG CTCGGCTCAG TTCCACACAA CCCTAGTCGT AGCCAGCCCA AATAAGGAAA	1620
GTTTAGTTGT TGAAGCAGAC TGGTCAGGTT ATATTAACCT TGAACCTAAG GGTGAAAATG	1680
GCTTTGGCTA TGATCCCCTC TTCTTGTAG GAGAAACAGG TGAGTCATCA GCTGAATTAA	1740
CCCTGGAAGA AAAAAATAGT CAATCTCACC GTGCCTTAGC CGTTAAGAAA CTTTGGAGG	1800
TATTTCCATC ATGGCAAAGC AAACCATCAT TGTAATGAGC GATTCCCATG GCGATAGCTT	1860

1059

GATTGTGGAA GAAGTCCGTG ATCGCTATGT GGGCAAAGTC GATGCTGTTT TTCATAACGG	1920
CGATTCTGAA CTACGTCCGG ATTCTCCACT TTGGGAGGGC ATCCGCGTTG TTAAAGGGAA	1980
CATGGACTTC TACGCCGGCT ACCCAGAACG TCTGGTGA CT GAGCTTGGTT CGACCAAGAT	2040
TATCCAAACT CATGGTCACT TGT TTGACAT CAATTTCAAC TTTCAAAAGT TGGACTACTG	2100
GGCTCAGGAG GAAGAGGCCG CTATCTGCCT CTATGGTCAC TTGCATGTGC CAAGTGCTTG	2160
GTTGGAAGGC AAGATCCTCT TTCTAAATCC AGGTTCTATC AGTCAACCAC GAGGTACCAT	2220
CAGAGAATGT CTCTATGCTC GTGTGGAGAT TGATGATAGT TACTTCAAAG TGGACTTTTT	2280
GACACGAGAT CACGAGGTGT ATCCAGGTTT GTCCAAGGAG TTAGCCGAT GATTGCCAAG	2340
GAGTTTGAGA CTTTCTTGTT GGGGCAGGAG GAACTTTTT TGACCCCTGC TAAAAATCTA	2400
GCTGTGTTGA TTGATACCCA CAATGCGGAT CATGCGACCC TCTTGCTCAG TCAGATGACC	2460
TATACCCGTG TTCCCGTTGT GACAGATGAA AAACAGTTTG TTGGGACGAT TGGACTCAGA	2520
GATATTATGG CTTATCAGAT GGAGCATGAC TTGAGCCAAG AAATCATGGC GGATACGGAT	2580
ATCGTTCATA TGACAAAAAC GGACGTAGCG GTTGTTTCGC CTGATTTTAC CATTACGGAG	2640
GTCTTGACACA AGCTAGTAGA TGAGTCCTTC TTACCGGTTG TGGATGCAGA GGGTATTTTC	2700
CAAGGGATTA TTACGCGCAA GTCCATCCTC AAGGCCGTTA ATGCCCTCTT GCATGACTTT	2760
AGTAAGGAAT ATGAGATTCG ATGCCAATGA GAGACAGGAT TTCAGCCTTT TTAGAGGAAA	2820
AGCAGGGCTT GTCTGTCAAT TCCAAGCAGT CCTATAAGTA TGATTGGAG CAATTTTAG	2880
ACATGGTAGG TGAGCGGATT TCTGAGACCA GTCTCAAGAT TTACCAAGCC CAGCTAGCCA	2940
ATCTAAAAAT CAGCGCCCAG AAGCGAAAGA TTTCCGCCCTG TAACCAATTT CTATACTTTC	3000
TCTATCAAAA AGGAGAGGTG GACAGCTTTT ACCGCTTGGA ATTAGCCAAA CAAGCTGAAA	3060
AGAAGACGGA AAAGCCAGAG ATTCTATACC TAGACTCTTT TTGGCAGGAA AGCGACCATC	3120
CAGAGGGCCG CTTGCTAGCG CTCTTAATCC TAGAAATGGG GCTCTTGCCC AGTGAGATTT	3180
TAGCCATCAA GGTGCGGAC ATCAATCTGG ATTTTCAGGT GTTGCGAATC AGCAAGGCTT	3240
CCCAACAGAG GATTGTCACC ATCCACAGG CCTTGCTTTC AGAATTGGAA CCCTTGATGG	3300
GGCAGACCTA TCTTTTGAA AGAGGAGAGA AACCTATTC TCGTCAGTGG GCCTTTCGTC	3360
AGTTAGAATC TTTGTCAAG GAGAAAGGTT TTCCATCCTT ATCAGCTCAA GTCTTACGTG	3420
AACAGTTTAT TCTAAGACAA ATAGAAAACA AGGTGATTT GTACGAAATT GCAAAAAAAT	3480
TAGGATTAAA AACAGTCCTG ACCTTAGAAA AATATAGATA ATGGATATTA AATTAAAAGA	3540
TTTTGAAGGA CCCCTGGACT TGCTCTTGCA TCTGGTTTCT AAGTACCAGA TGGATATCTA	3600

1060

CGATGTGCCC ATTACGGAAG TCATCGAACA GTATCTAGCC TATGTCTCAA CCCTGCAGGC	3660
CATGCGTCTG GAACTGACGG GTGAGTACAT GGTCAATGGCT AGTCAGCTCA TGCTGATTAA	3720
GAGTCGTAAA CTCCTTCCGA AGGTAGCAGA ACTGACAGAC TTGGGGGATG ACCTGGAGCA	3780
GGACCTCCTC TCTCAAATCG AAGAATATCG CAAGTCAAG CTCTTGGGTG AGCACTTGGA	3840
AGCCAAGCAC CAAGAACGGG CCCAGTATTA TTCCAAAGCG CCGACAGAGT TGATTACGA	3900
AGATGCGGAG CTTGTGCATG ACAAGACGAC CATTGACCTC TTTTGTACTT TTTCAAATAT	3960
CCTAGCCAAG AAAAAAGAGG AGTTTGCACA AAATCACACG ACGATCTTGC GGGATGAGTA	4020
TAAGATTGAG GACATGATGA TTATCGTGAA AGAGTCCTTG ATTGGACGAG ATCAATTGCG	4080
CTTGACAGGAT TTGTTCAAGG AAGCCAGAA TGTCCAAGAG GTCATCACCC TCTTTTGGC	4140
AACCCTAGAG TTAATCAAAA CCCAGGAGTT GATCCTCGTG CAAGAGGAGA GTTTTGGAGA	4200
TATCTATCTC ATGGAAGAAG AGGAAGAAAG TCAAGTGCCT CAAAGCTAGA CTTGATAGAG	4260
AGGAAAGATG AGTACTTTAG CAAAATAGA AGCGCTCTTG TTTGTAGCGG GTGAAGATGG	4320
GATTCGGGTC CGCCAGTTAG CTGAACTCCT CTCTCTGCCA CCGACAGGCA TCCAGCAAAG	4380
TTTAGGAAAA TTAGCCCAAG AGTATGAAAA GGACCCAGAT TCCAGTTTGG CTTTGATTGA	4440
GACAAAGTGGT GCTTATAGAT TGGTGACCAA GCCTCAATTT GCAGAGATTT TGAAGGAATA	4500
CTCTAAGGCG CCTATCAACC AGAGCTTGTC TCGGGCTGCC CTTGAGACCT TGTCCATTAT	4560
TGCCTACAAA CAGCCGATTA CGCGGATAGA AATTGATGCC ATCCGTGGAG TTAACCTGAG	4620
TGGAGCCTTG GCAAAGTTGC AGGCTTTTGA CCTGATAAAG GAAGACGGGA AAAAGGAAGT	4680
ATTGGGGCGC CCCAACCTCT ATGTGACTAC GGATTATTTT CTAGATTACA TGGGGATAAA	4740
CCATTTAGAA GAATTACCAG TGATTGATGA GCTTGAGATT CAAGCCCAAG AAAGCCAATT	4800
ATTTGGTGAA AGGATAGAAG AAGATGAGAA TCAATAAGTA TATTGCCAC GCAGGTGTGG	4860
CCAGTAGGAG AAAAGCAGAA GAGCTGATTA AGCAAGGCTT GGTGACGGTT AACGGCCAAG	4920
TGGTGCGTGA ACTAGCAACC ACTATCAAGT CAGGCGACAA GGTGGAAGTT GAAGGTCAAC	4980
CTATCTACAA CGAAGAAAAG GTCTACTATC TGCTTAACAA ACCACGCGGT GTGATTTCCA	5040
GTGTGACAGA TGATAAGGGT CGCAAGACGG TTGTGACCT CTTGCCCAAT GTCAAAGAGC	5100
GTATTTACCC TGTGGGTCGT TTGGACTGGG ATACATCAGG TGTCTTGATT TTGACCAATG	5160
ATGGGGACTT TACAGACGAG ATGATTCACC CTCGTAATGA GATTGACAAG GTTTATGTCG	5220
CGCGTGTAA AGGTGTGGCC AATAAGGACA ATCTCCGCCC CTTGACCCGT GGTCTTGAGA	5280
TTGATGGTAA GAAAACCAAG CCAGCTGTTT ATGAAATTCT CAAAGTGGAC CCAGTCAAAA	5340
ATCGCTCTGT GGTGCAGTTG ACCATCCATG AAGGGCGTAA CCATCAGGTT AAAAAGATGT	5400

1061

TTGAAGCTGT TGGTCTCCAA GTAGATAAGT TGTCTCGGAC TCGTTTCGGA CACCTAGACT	5460
TGACAGGACT CCGTCCAGGA GAATCCCGTC GTCTTAATAA AAAAGAAATC AGCCAACTAC	5520
ACACCATGGC TGTAAC TAAG AAATAATGAA ACGAATTTTA ATAGCGCCTG TCGCGTTTTA	5580
CCAACGTTTT ATCTCACCAG TCTTTCACC CTCTGTGCGC TTTGAGCTGA CTTGTTCCAA	5640
CTACATGATT CAGGCTATTG AAAACATGG GTTTAAGGGG GTATTGATGG GCTTGGCTCG	5700
GATTTTACGT TGTATCCCT GGTGAAAAC AGGTAAGGAC CCCGTTCCAG ACCGCTTTTC	5760
CCTTAAACGA AATCAAGAAG GGAATGAGG TGGGGTAAAT AGATTTCAAA ATGATAAAAA	5820
CGCATCCTAT CAGGTTTGAG TGAAC TTGAT AGGATGCGTT TTAGAATGTC AAAATTTTAT	5880
ACTCTTCGAA AATCTCTTCA AACCGCGTCA GCTTTCATCT GCAACCTCAA AACAGTGTTT	5940
TGACAAACCT GCGGCTAGTT TCCTAGTTTG CTCTTTGATT TTCATTGAGT ATTAAATTGA	6000
GTTTGAAGTG GCTTATTTCA AAGCTTTTTG TATGTCTTCA ATCATGAGTT TTGTTGATTC	6060
AAGTCCGCCT CCGCTTAGAT ACCAGAGGTC TGGTGTAGT TGGATAATCT TACCATTTTT	6120
AGCAGCAGGT GTTTCAGCGA TAAGGGCATT TTCTAGGACA CCGTCGTTGC TAGAGTTGTC	6180
CCCACCGATG GCAAGGGTAC GGTGATGAC AAAGAGGATG TCAGGGTTGA TTTCTTTGAC	6240
ACTTTCAAAG CTGACTTCTT GTCCGTGGCG TGAGTCTTCA AATTTTGTAT CAGTTGGTTT	6300
GAATTTCAAG GTTTGGTACA AGAAAGAGAA ACGAGATTTG GCACCAAAGG CTGCCATTTT	6360
TCCTTCATTA AGGAGGATCG CAAGGGCTTT TTTGTCAGAG CTTTCATTTT TAGTAGCGAC	6420
TTCTTGGATG CTCTGTCTA GCTTGGTCAA TTCTTCTTG GCTTCTGTG TACCAGTTTC	6480
GCCGAAGGCA CTTGCTAAGG ATTCGATATT AGCCTTGGTA GAAGTCCAGT AGTCGTCCTT	6540
GCTTGCTTGG AAGAGAACGG TTGGGGCGAT TTCTTTGAAT TTGTCTACGA ATTTTGTGT	6600
ACGTGGCGAA GCGATAATCA AATCAGGCTC AAGGGCGCG ATAGCTTCTA AATCAGGTC	6660
TTTCATAGAA CCAACATTTT TGACAGTTCC CACTAGGTCT TTTAGATAAG TCGGAACAGT	6720
TTTTGTAGGC ATTCCGACGA TATTTTTTTC AAATCCTAAA GCGCGAATAG TATCCGCAGC	6780
GCCGAGGTCA AAGGTCACAA TCTTTTCAGG AACTTTGGAA AGTTTGACCT CGTCCAGTGA	6840
ACTTTTAATG GTTACCTCTG TTGGAGCAGA GCTACTGGTC TCTGTCTGAC TAGTGCTTGA	6900
GTTTGTACTA CATGCACCAA GTAGGAGCAA GAAGCTGGCC ACTAGGGCAG TGAAATAAAG	6960
TTTAAGGGAT GTTTTCATAA TTTCTCCTTT TTAATAATGTG ATAACGATTT AGGGAGTCTC	7020
TTAATCTTAT TGACTAAGAG ACTGAAGGTT CTCTAACTTG AGCTTTTATG TTACTAGCTA	7080
TAGATACAGA TCTTTTGTG ATTGATATCA GCTAGCGTGA TGGGAATCTC ATAAAGTTGA	7140

1062

CTGAGCAGGT CAGCCTGCAT GATTTGATCG GTTCTTCCCT TGCTAAAGAC CTGGCCGTCC	7200
TTGAAGGCGA CAATTTTCATC TGCATACTGA CTGGCCATGT TGATATCGTG GAGGACGATG	7260
ATAATGGTCT TGCCGAGTTC CTCCACCAGT CGTCGAAGAA TCTGCATCAT GCTGACGCTT	7320
TGCTTGATAT CGAGATTGTT GAGTGGTTCG TCCAGCAAGA TAAAGTCCGT ATCCTGGGCC	7380
AGTACCATAG CGATAAAGAC GCGCTGGAGT TGCCCCCTG ACAGGCTATT GATGTAGCGG	7440
TCTTTTAAGT TGGTCAGTTC TAAATAGTTC AGAGTTTCTC GGATTTTTC CCAGTCTTCT	7500
GATCTAAGTC GACCTCGGCT GTAGGAAAA CGTCCAAAAC TGACCAGTTC TTCAACAGTC	7560
AATTTGGCTT GGTAATTGAT TTTCTGTTTT AGGATGGTTA GTTCTTGGGC CAGTTCCTGC	7620
GAATTCACG TCTCGATTTC ACGTCCTTTG ATACTGAGAA CTCCTGATC TTTCTTGTT	7680
AGCCTGCTCA TGATGGAGAG GAGAGTCGAT TTTCCAGCAC CATTTGGACC AATAAAGGCT	7740
GTCAGTTTTT GAGGACTGAC TTCAAGCGAA ATGCCTTGCA AAATATCCTG TTTTGAATG	7800
GATTTGTCAA TGTTTTCCAG TTTCACTGAC GAGACCTCCT ATATAGTAAG ATAAAGAATA	7860
AGAAGCCACC CACACTCTCA ATGATCATAC TGATACGAAT TTCCAGTGCA AAGACTCGTT	7920
CAATCAAGGC TTGCCCAAG GTTAAGCTAA TAAATCCAAC CAGAATGGCC ACTATAAAGA	7980
GTAACTTGTG CTGATAGTCT TTGACAATCA GGTAGGTGAG GTTGGCCAGT ATAAAGCCGA	8040
AGAAGGCCAT AGGTCTTACC AAGGCAGTGG CCGTTGAGGT CAAAAGCACG ATTCCCCAGA	8100
GGAGCTCTTT CTGTTCTTTT TCAACATCGA GTCCCAATAT CTGAGCCGTT TCTCTTTGCA	8160
GGTGCAAGAC ATCTAGAACG ACTGCTTTTC GAAAGAAAA GATTGTCAA GCGAGGATGA	8220
TCAGAGAACC GATGGCTAGG ATGGAAGTGT TGAGATGTTG AAAGGAGGCA AAAAGACTAT	8280
TTTGCAGTTT ATCGTATTCG TTTGGATCCA TTAGGACTTG AAGGAAGGTG CTGATATTTT	8340
GAAAGAGACT TCTGAGCGCT AGACAGATCA GCAGGACGAA GACCAGGTCT TGCTTCATCA	8400
GTGTCTTCAA GTAACCTTGT AAGGCGAGAA AGAAGAGGGA CTGGACAAGA AGTAAGACTA	8460
GGAATTCTAA GATAGGGGAT TTGCCAAGTT GAAGAACTT GCTTTCAAAA ACCAGTAGTA	8520
GGGTTTGTAG TAGGACGTAG AAGGATTCAA TTCCCAAAAT ACTAGGCGTC AGGAAGCGAT	8580
TTTCCGTCAG GGTTTGAAAA CTAATGGTCG AAATCCCAGT CGCGATGGCT ACCAAGAGAT	8640
AAACGATGAT CTTTTGGGAA CGCAACTTCC AAGCAAAGGC TGACAAGTGA GTGATGGGCC	8700
AAAAGTAGAG AAGACAAGCT CCGATGGCAA GAATAATGAG AATCCAGAAG AGCTTGGTAT	8760
GTTTGCTTTT AGTCTGCATC TTTTCGTCCC CCTCTCCAGA GAAGTAGGAT AAAGACGAGA	8820
CTACCGATGA TTCCTAGCAA GAGACTGACA GACAACTCAT AGGGCCTAAT CAGAACTCGG	8880
GATAGGATAT CGCAAGCCAG AACTAGATTG GCACCAACCA GTGCGACCAT GAGTTTGGTT	8940

1063

TGACTTAGAT TATCTCCATA GCGCTTGCGA ACAAGATTGG GAACGATAAC TCCGAGAAAT	9000
GGTAGGCCAC CCACGGTAAT CATGGTGACG CTTGTCTGTA GCGCCACCAG AAAGAGGGCC	9060
AGTTTTTCAA GTAGGGAGTA GGAAATCCCC AAACCTCTCGC TGGTTTCTTT CCCTAGATTC	9120
ATGATGGTGA AGGTTTGGGA TAATTTCCAA ACGGTATCA GGATGATGAG GCCTAAGAAG	9180
AGCCACTCAT ACTGATGGGT CTGAATCATG GAGAAGGAGC CCTGGGTCCA GGCAGTCATA	9240
CTCTGAACCA GATTGAAACG ATAGGCGATA ACTTCTGTGA CTGAGCCGAT AATCCCGCTA	9300
TAGATGATCC CAATCAGAGG CAACATCCAC CTTTCCTTTA CAGTAAAAAT GGTCATAAAG	9360
GCTAGGAAGA AGAGGGTGAA TACGATGGAT GAAACAAAAG CGAAGAGCAT CTTGTGGGTC	9420
AGACTAGCCG ATGGAAAGAC AAAAAGGCTC AGCACCATT CAGTTTGGC GGCTTCAGTC	9480
GTTCCAAC TG TACTCGGTGC AGCAAACTGA TTTTGGGTAA TAGTCTGCAT GAGAAGGCCT	9540
GCCATACTCA TACTAGAGGC AGTCAGGAGA ATACTGATAG TTCTTGGGAG ACGGGACTCT	9600
TGAAAGAGGA GCCAGGTCTG CTGGTCGAAA TCAAATAGCT TTCCCATGA AAAATCACTG	9660
GTCCCAATGC TAATAGAGAG AAAGACTAGG AGTAGAAGTA AGCCAGG	9707

(2) INFORMATION FOR SEQ ID NO: 165:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 5910 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 165:

CCGCAATTAT GCTTGAAAAG GAGTATACTT ATAAGTAACG CAAACGTTTG CGTCTGAAAA	60
ATACGCAACG TTCCATTATT TTAACACACG AGGTGCTATT ATGAAAAAAC GTCAAAGTGG	120
TGTGTTGATG CACATCTCTT CTCTTCCAGG AGCTTACGGA ATCGGATCAT TTGGTCAAAG	180
TGCTTACGAC TTCGTTGATT TCTTGGTCCG TACAAAACAA CGTTACTGGC AAATCCTTCC	240
ATTAGGAGCA ACTAGTTACG GGGATTCTCC TTACCAATCT TTCTCAGCCT TCGCAGGAAA	300
CACTCATTTT ATCGATTAG ATATCTTGGT GGAGCAAGGT TTGTTGGAAG CAAGTGACCT	360
TGAAGGAGTT GACTTTGGTA GCGATGCGTC TGAAGTTGAC TATGCTAAAA TCTACTATGC	420
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TTTGTAGAAA TTTGCTCAAG ACAACCAATC ATGGCTTGAG CTCTTTGCTG AGTATATGGC	540
TATCAAAGAG TATTTTGACA ATCTTGCTTG GACTGAATGG CCAGATGCAG ATGCTCGTGC	600

1064

TCGTAAAGCT TCAGCACTTG AAAGCTATCG TGAGCAATTG GCAGACAAGT TGGTTTACCA	660
CCGTGTGACT CAATACTTCT TCTTCCAACA ATGGTTGAAA TTGAAAGCTT ACGCTAACGA	720
CAACCACATC GAAATCGTTG GGGACATGCC AATCTACGTA GCGGAAGATT CAAGTGATAT	780
GTGGGGCAAAT CCACATCTCT TCAAAACAGA TGTCAATGGT AAGGCTACTT GTATCGCAGG	840
ATGCCCCACCA GATGAGTTTT CTGTAAGTGG TCAGCTTTGG GGTAATCCAA TCTATGACTG	900
GGAAGCAATG GACAAAGACG GCTACAAATG GTGGATTGAA CGCTTGCGTG AAAGCTTCAA	960
AATCTACGAT ATCGTTCGTA TCGACCACTT CCGTGGCTTC GAATCTTACT GGGAAATCCC	1020
TGCTGGTTCC GATACAGCAG CACCTGGTGA GTGGGTGAAA GGTCCAGGTT ACAAGCTTTT	1080
TGCAGCCGTT AAGGAAGAAC TTGGTGAAGT AAACATCATC GCAGAAGACC TTGGCTTCAT	1140
GACAGATGAA GTGATCGAAT TGCGTGAACG TACTGGCTTC CCAGGAATGA AGATTCTTCA	1200
ATTTGCCCTC AACCCAGAAG ACGAAAGCAT TGATAGCCCA CACTTGGCAC CTGCTAACTC	1260
AGTTATGTAC ACAGGAACAC ACGATAACAA TACGGTTCTT GGTGGTACC GTAATGAGAT	1320
TGATGATGCG ACTCGTGAGT ACATGGCTCG TTACACGAAC CGTAAAGAAT ACGAAACAGT	1380
GGTACACGCT ATGCTTCGTA CAGTATTTTC ATCAGTTAGC TTTATGGCAA TTGCAACTAT	1440
GCAAGATTTA CTAGAATTGG ATGAGGCAGC TCGTATGAAC TTCCCATCTA CCCTTGGTGG	1500
AAACTGGTCT TGGCGTATGA CTGAAGATCA ATTGACACCA GCTGTCGAGG AAGGTTTGCT	1560
TGACTTGACA ACAATTATC GCCGAATTAA TGAAAATTTG GTAGATTTAA AGAAATAAGA	1620
CAATAATCAG GAGACAATA AACATGTTAT CACTACAAGA ATTTGTACAA AATCGTTACA	1680
ATAAAACCAT TGCAGATGT AGCAATGAAG AGCTTTACCT TGCTCTTCTT AACTACAGCA	1740
AGCTTGCAAG CAGCCAAAAA CCAGTCAACA CTGGTAAGAA AAAAGTTTAC TACATCTCAG	1800
CTGAGTTCTT GATTGGTAAA CTCTTGTCAA ACAACTTGAT TAACCTTGGT CTTTACGACG	1860
ATGTTAAAAA AGAACTTGCA GCTGCAGGTA AAGACTTGAT CGAAGTTGAA GAAGTTGAAT	1920
TGGAACCATC TCTTGGTAAT GGTGGTTTGG GACGTTTGGC TGCCTGCTTT ATCGACTCAA	1980
TTGCTACTCT TGGTTTGAAT GGTGACGGTG TTGGTCTTAA CTACCACTTT GGTCTTTTCC	2040
AACAAGTTCT TAAAAACAAC CAACAAGAAA CAATTCCAAA TGCATGGTTG ACAGAGCAAA	2100
ACTGGTTGGT TCGCTCAAGC CGTAGCTACC AAGTACCATT TGCAGACTTT ACTTTGACAT	2160
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TGTTTGACTT GGATTCAGTT GATTCTTCTA TTATTAAAGA TGGTATCAAC TTTGACAAGA	2280
CAGATATCGC TCGCAACTTA ACTCTCTTCC TTTACCCAGA TGATAGTGAC CGTCAAGGTG	2340
AATTGCTCCG TATCTTCCAA CAATACTTCA TGGTTTCAAA CGGTGCGCAA TTGATCATCG	2400

1065

ACGAAGCAAT CGAAAAAGGA AGCAACTTGC ATGACCTTGC TGACTACGCA GTTGTCCAAA	2460
TCAACGATAC TCACCCATCA ATGGTGATTC CTGAATTGAT TCGTCTTTTG ACTGCACGTG	2520
GTATCGATCT TGACGAAGCA ATCTCAATTG TTCGTAGCAT GACTGCCTAC ACTAACCACA	2580
CAATCCTTGC TGAAGCGCTT GAAAAATGGC CTCTTGAATT CTTGCAAGAA GTGGTTCCTC	2640
ACTTGGTACC AATCATCGAA GAATTGGACC GTCGTGTGAA GGCAGAGTAC AAAGATCCAG	2700
CTGTTCAAAT CATCGATGAG AGCGGACGTG TTCACATGGC TCACATGGAT ATCCACTACG	2760
GATACAGTGT TAACGGGGTT GCAGCACTCC ATACTGAAAT CTTGAAAAAT TCTGAGTTGA	2820
AAGCCTTCTA CGACCTTTAC CCAGAAAAGT TCAACAACAA AACAAACGGT ATCACTTTCC	2880
GTCGTTGGCT TATGCATGCT AACCCAAGAT TGTCTCACTA CTTGGATGAG ATTCTTGGAG	2940
ATGGTTGGCA CCATGAAGCA GATGAGCTTG AAAAAGCTTT GTCTTATGAA GACAAAGCAG	3000
TTGTCAAAGA AAAATTGGAA AGCATCAAGG CTCACAACAA ACGTAAATTG GTCGTCCT	3060
TGAAAGAACA CCAAGGTGTG GAAATCAATC CAAATCTAT CTTTGATATC CAAATCAAAC	3120
GTCTTCACGA GTACAAACGC CAACAAATGA ACGCTTTGTA CGTGATCCAC AAATACCTTG	3180
ACATCAAAGC TGGAACATC CCTGCTCGTC CAATCACAAT CTTCTTTGGT GGTAAGCAG	3240
CTCCAGCCTA CACAATCGCT CAAGACATTA TCCATTTAAT CTTTGCATG TCAGAAGTTA	3300
TTGCTAACGA TCCAGCAGTA GCTCCACACT TGCAAGTAGT TATGGTTGAA AACTACAACG	3360
TTACTGCAGC AAGTTTCCTT ATCCCAGCAT GTGATATCTC AGAACAATC TCACCTTGCTT	3420
CTAAAGAAGC TTCAGGTACT GGTAACATGA AATTCATGTT GAACGGAGCT TTGACACTTG	3480
GTACTATGGA CGGTGCTAAC GTGGAAATCG CTGAGTTGGT TGGAGAAGAA AACATCTACA	3540
TCTTCGGTGA AGATTTCAGAA ACTGTTATCG ACCTTTACGC AAAAGCAGCT TACAAATCAA	3600
GCGAATTCTA CGCTCGTGAA GCTATCAAAC CATTGGTTGA CTTTCATCGTT AGTGATGCAG	3660
TTCTTGCAGC TGGAAACAAA GAGCGCTTGG AACGTTTTTA CAATGAATTG ATCAACAAAG	3720
ACTGGTTCAT GACTCTTCTT GATTTGGAAG ACTACATCAA AGTCAAAGAG CAAATGCTTG	3780
CTGACTACGA AGACCGTGAC GCATGGTTGG ATAAAGTCAT CGTTAACATT TCTAAAGCAG	3840
GATTCTTCTC ATCTGACCGT ACAATCGCTC AGTATAACGA AGACATCTGG CACTTGAAC	3900
AATACTCTTC GAAAATCTCT TCAAACCACG TCAGCTTTAT CTGCAACCTC AAAGCAGTGC	3960
TTTGAGCAAC TGCGGCTAGC TTCCTAGTTT GCTCTTTGAT TTTCATTGAG TATAAGATAC	4020
AAATTTATAC TAATACATTT TGTAATAAAG CGAGTTTCGA TTGAAATTCG CTTTTTTAAT	4080
GATGTAGATT TGGGTCAATC TTGTCTAAAA ATAGGGAAT CCTAGATACA GTGAAGGCTT	4140

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TAAATGCTGG TTTTACTGT CCTCAGCCTT ATATTTTTC GTAGTTGGTT ACCTCATATC	4200
TATTATATTC GCTTACATAA AGTATTATAA TATAATTGTA GGAAAGAAGG TGTTTTATG	4260
ATATACACAC TTAAATTGGT GTTGTTTATT ACCTTCTTG TAATAAGCTT GTTACCTGAT	4320
AAGATTTTGG GAAAAAATAA AAAAATTGG AAAATAGTTT TTGCAATATT GACGGCAGTG	4380
GCAGCATTGT CATTTATGTA CTAAGTTATT TTAAGAATGT AGGGAAATAA ACCCTACATT	4440
CTTTTAGT TTTCTGTT TCTAAATCT ATTTATCCAA GCGATTCAAC ATTTCTTGCT	4500
TCTTCGCTTC AAGTTCGCA CGCTTTCTT CGATTTCCGC ATGTTTTTC TCGAGTTCAG	4560
AACAACCTGC ACCATTGCTA AATTCCTTTC GCCATCAGGA GATAGGGTGA GTCGACATGT	4620
CTATTACTCA CCCAAGCAG TCCTACAAAG CAGGAATTT CTGTTACTTT TTTGGAAATA	4680
GTAACGTTTA TACAGCTTG AACTTCGTA TCAAAGCGCC AAACACACTC CGAGGGGTTT	4740
ACAGAAAGCA GAAAAGGAAT GATCTGGTAT AAGATCATTC CTTTTCTCTC TTTTCTTTA	4800
AGTAATTATA TACAATGTAC GACGAAGTCG TCATTGCAAT GCTGATCCAC CACCTAAAGG	4860
GAACCTTAAA CAACATTGAT AAGATAAAGA ATATAACAA CGAAAATACG TTATACCCAA	4920
TTAATTTTAT TGTATATCTC ATGATTAAAA GTTAATCCTT CCGTTGTTAG GAATGGCATC	4980
ATTTTATCC CATAATTGTG CTAAATAAGT CCCCGGTGAT AATAAATCA TAGCGAATTC	5040
TAAAGCAACA TCATTACAA ACCAACTACC TAGATATCTA GAAATTGCTG AACGAATAGC	5100
ACTTTTGCT GCATGTTTC CTTTACTTT AATTAGATT GCAAGGCCTG CAGTAGTTC	5160
TCCTAATGCT AAAGCTATTG CAGTATCTAA TAGAGCACCC ATTTGATTAA CTGTAATACC	5220
TTGCCAACT GCTCTAAATG GAGAGTATGT AGGTGGGATT GTATAATCGC CTTGTAATTG	5280
TCGGTTAATT ACTTCTTTGA TCCATTGTTG TGAGACGTCT GGATGAAAAG ATTGGATTTC	5340
GTTTGCAAGT GTATTGATTT GTTCTTCTGT TAGAGAAGTG ACAGGTTGAA GTTCCATATT	5400
TGTTTCAATT TGTGATACTT GTTCAGAAGC GTATACAGCT GAAACACTTG GAATCGCTGA	5460
TACAATTAAC ACAATTGACG TCAAAAAAAC CGAAATAAAT TTCATTAAAT GTTTCATGAG	5520
CTTTCTCCT TTTTATTTGC ATCTGCTTAC ATTTTATCAT ATACTGTTAT TATAGTCAAA	5580
AAAATATGCT ATTATGTAA AAAAATATTT TTCAAAATAT AAATGGACGG ATTTATTTTG	5640
GATTTTATTT GTTATTTGA CCTGCCTCTA TATTGGTAAC CATGATTTGT TTAATCTCAA	5700
TCATCAAGAA TTCTCTTTTC GTGGTAGCGT TTGGGGTCTG GTACTGGCCT TATATCACTT	5760
ACTATTCATT GATAAGTTTG TTATATCGAA TCGAAAATAA AGATTAGAGC TATGCTTGAC	5820
TGTGTACTTT TAGGATTTAT TTTGGAGGAA GATTTGTCT CTATTATTIA TTATTTTAAA	5880
TTTATTATT TTGTATAAGA TCTATTCTTT	5910

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(2) INFORMATION FOR SEQ ID NO: 166:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 5406 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 166:

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GGCATAGCGA CTCATTTTTC CAACTGTCCA GGCTGGATAC CAGACTAATT TAACCTCAGT      60
ATCCGTTACT TCTGGAACCT CTATCATAGC ATCATAAATC TGGTCTGTCA AAAGGTCTGC      120
TAAGGGACAA CCCATAGTTG TCAAAGTCAT GTCATCTCTT GTTGCCCTG TGTCACCGTC      180
AAAACGAATC TCATAGATCA AACCAAGATT GACAATATCG ATTCCCAACT CAGGGTCGAT      240
GACTTCTTCC AAGGCTGTTA AAATCCGTGT TTTGATGTTT TCAATTTGCT CTTCTGTATA      300
AGCCATATTT TCCTCACTCT TAGTCTTCAA TAAATCAGC AAGCGGTTTG CTACGACTTG      360
GTTGGCGTAG TTTTCTCAA GCCTTTGCTT CAATCTGACG GATACGCTCA CGAGTTACGT      420
TAAAGACTTT CCCACATCT TCAAGTGTGC GCATTTTTC ATCATCTAGT CCAAAACGTA      480
GACGCAGAAC ATTTTCTTCA CGGTCTGTAA GAGTATCTAA GATTTTCATCC AATTGCTCAC      540
GCAAGACGAT ACGAGTCGTA TAATCCACTG GATTTTCAAT CACTTCATCT TCGATAAAGT      600
CTCCAAGGTG GCTATCGTCC TCTTCACCGA TAGGAGTTTC AAGAGATACT GGTTCCTGGG      660
CAATCTTCAA GATTTTCAGG ACCTTATCAG GTGTCATATC CATTCGTTCA GCAATCTGTT      720
CTGGTGTCGG ATCTTGCCCC AATTCTTGAA GGAGATTCCG CTGTTACGCA ACCAATTAT      780
TGATAGTTTC AACCATGTGA ACTGGGATAC GGATGGTACG AGCTTGGTCC GCAATAGCAC      840
GAGTGATAGC CTGACGAATC CACCAAGTTG CATAAGTTGA AAACCTGAAC CCTTTAGAAT      900
AGTCAAACCT GTCAACCGCC TTCATCAAGC CCATATTTCC TTCTTGAATC AAGTCAAGGA      960
ACTGCATACC ACGACCGACA TAGCGTTTGG CAATGGAAAC AACCAAACGA AGATTGGCTT     1020
CCGCAAGACG TTGTTTGGCT TCGATATCAC CAGCTTCAAC AGCCAGTGCC AACTCTTTCT     1080
CCTCTTCATT GGTCAAGAGA GGAACGACCC CTATTTCTTT CAAGTACATA CGGACAGGGT     1140
CATTGACCTT AGCAGAAGTT GACCCAATCA AGTCCTCATC GCTGAGTTCT GGTTCCTCTT     1200
CATTGCTGAG AACACGCGCA CTTGGATTTT CTTGTTATC TGTGATAGAA ATGCCTGCAT     1260
CCTGAATCCG TTGCAAGAGA TCTTCAATCC CATCAGCGTC CAAGGTAAAA GGAATAACCA     1320
GACTTGCATT GATTTTCATCA TCTGTTGCTG TCCCTTTTTC CTTATGATTA CGGATAAATT     1380

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CTGCTACCTG TACGTCAAAT GTTGTTACTT CTTTTTGTTT TGTTGCCATT ATTACTCCAT	1440
TCTTCTCTTT TGGGAAATTA AACGTTCCAA TTCTTCTAGG GCTGTATCTG TATCTCCTAC	1500
ATGGCTAGCT TCCTGCACCT TCTTTTGGAT TCTCATATTG TCCTGATTCA AGAGAGCCTT	1560
GTTTCGAGTC ATCTCTACTT CACTAAGTTC CTGCGGCGAT ATCTCAGCAG GCAAATCCTG	1620
AGCTAAAACT TGGTACCAAG CTCTTTCAAC TTCCTCTGTC TGCTCTGCTA AAACCTCTGG	1680
AGGAAGATTT CCATACTGGC CAAGCAAGTC ATATAAGACC TGAAATTCAG GTGTAGCAAA	1740
TGCAAAGTCT TCTCGCAAAC GGTAATCGTT CAAAACAAGA GGGGATTCCA TCATCCGATA	1800
GAGTAGATGG GCTTCTGCCC TCATAATAGC CGATAACTGC TTGGTGACAG GCATGGTGAT	1860
TGGCGTCGGT CTGGAAATTC CTTCCATGCG ATTCTGCCTT TGCACCTGAC GACTCTCATT	1920
AACAATCTGC TCAATCTGGG TATAATCAAA GGACGCCAGA CTGTCAGCTA AAATATGAAT	1980
ATAGCTGTTT TGAGCAGCGA TGGACTTTTC TTGAACAATC AAGGGAGCTA TTTTTTCAAG	2040
AAACTCAATC TGAGCCTGCA GATTTTCACT GTTTTCAGGT TTGTACTGAT GAATGTAGAA	2100
CTCAATCGGA CTAATACGAG TTTTCGTTAA TAGATAGGCC AAGTCTTCTG GACCATTTTT	2160
TTGTAGATAC TCATCAGGAT CCAAGTTATC AGGCATGCTG ACGATTTGCA CAGGCATATC	2220
ACCAATTTCA TCCAATGCTT TCAATGTGCG GGCTTGCCCA GCCTTATCTC CATCGTAAAC	2280
AAGAACCAAT TTCTTGGTTA ACCTTTTTCAG ATGCTCAACA TGCTCTCGAC TCAAGGCTGT	2340
TCCCATCGAC GCCACAGCAT TTTCGATTCC AGCCCGATAG GCTGCAATAA CATCCATGAA	2400
TCCTTCCATC AGGTAAATCT CACTAGCTTT TCCAGAAGAT CTTTTTGCCC TATCCATATG	2460
ATATAAATCG TAACTTTTGT TAAAAATTGC AGTCGATCGG CTGTTTTTAT ACTTAGAAGT	2520
TTGTGAATCC GTTTTTTGCC AGATACGACC TGAGAAGGCA ATGACCTTTC CTTGGTCATT	2580
TGTCAGGGGA AACATAATGC GATTGTGAAA GGTGTCTACA AATTGATTGG CATCCGAGAG	2640
ATAAACAGG CCTGAATCCA GTAAATCCTC TTCACGATC TGATCAGACA AACGTTGATA	2700
GAGATAGTTT CGTTCTGGAG GTGCTAAACC AATCCAAAAA TGTTTAAGCA CTTTCTCTGT	2760
CAACCCCGC TGATAAAGGT AATTTCTGGC CTCTTCGCCC ATAGTCGTTG TCATGAGAAT	2820
AGCATGGTAA AATTGGGCTG CATCTTCGTG CATATCATAA AGAGCTTGGT GAGGTGAGGC	2880
TGACTTCTGC TCACTATAAA GCGGTTTTTC AACCTCAATT CCAACACGCT GACCTAAGAT	2940
TTGGACTGCT TCTATAAAGG GAACCCCTTG GACTCCTCG ATGAACCTAA AGACATCACC	3000
TGAGCGACCA CAACCGAAAC AGTGATAAAA CTGCTTGTC TCTACAACAT TGAAAGATGG	3060
TGTTTTTTCA CCATGAAAAG GACAGAGCCC TAGATAGTTC CGTCCTGCCT TTTGTAAAGA	3120
AATCACATCT CCTATGACTT CCACAATGTT GGCATTGTTT TTGATTCTT CAATGACTTG	3180

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TTTGTCAACC ATACACAATA CCTCCATGTT ATCATAGTTT ACTTTATATA GTATACTTTA	3240
TTTCAGAAAA AAAGTAAACC ATTTCACTCA TTTTCCCTAC TTTATTCAAA GAGTTGATAA	3300
TAATCAGAGA TTTTCATTTT TGCCTTTTCT TCTTGGTTTA AATCTTGGAT AATTCGTCCT	3360
TCTTTCATGA CAATCAAGCG ATTGCCGTAT TTGAGAGCAT CTTCCATATG ATGAGTAATC	3420
ATAAGGGCTG TTAGCTGATC TTTCTTAACA AATTCATCTG TCAATTCCAT CAAAGCAACA	3480
CTAGTCTTTG GATCCAGGGC AGCAGTATGC TCATCTAACA GGAGTAATTC AGGTCGCTTC	3540
AAGGTGCGCA TCAAGAGACT CAAAGCCTGT CTTTGTCCAC CTGATAAGAA CTCAATCGGT	3600
GTATTCAAGT GTTCTCAAG ACCATTTTCT ACTTTTTCOA TGGTTGCCTG AAATTCATCC	3660
TTATAGCTAG TCAAGCGTCG TGGTAACAAT CCACGCTTTT CACCACGAAA CTTGGCGATT	3720
AAAAGATTTT CAGCGACCGT CATACGGGGA GCTGTCCCA TCTTTGGATC TTGGAAGACA	3780
CGAGACAGGT ACTTGGCACG CTTCTCGGGT GAAAACCTAG TGAGATCTTC ACCTAAAATA	3840
CGGATAGTTC CACTAGTTAG TGATAAGGTC CTTGCTATAG TGTAAAGAG AGTTGATTTT	3900
CCAGCACCAT TTCCGCCCAA AATCGTGATA AAGTCCCGTT CAAAAATTTT TAAGGAAACA	3960
TCATTTAAAA TAATCTTTTTC TTCATCAAAG CCATTTTTAA CGATTTTGGT TGCATTTTTT	4020
AATTCTACAA TTGCTGTCAT TTGCTTAACT TGGCTCCTTT CAAGATTGTT TGCTTAAATG	4080
TTGGAATCAT GAGGCAGACT GCTAAAATCA AGGCACTGTA TAAACGAAGG TAACCTGTAT	4140
TAAAGCCAAG TGCGATAACT GCCCACACTA AAAATTGATA AGCGATAGAA CCTACAACGA	4200
TAGTAACCAA ACGCTCTGCC AAGCTCAAAC TCTTGAAAAA AACTTCTCCA ATAATCAAAC	4260
TTGCAAGCCC CACAACGATA ACCCCGATCC CTCGAGACAC ATCGGCATAA CCTTCTTGCT	4320
GAGCAATGAG GGCACCTGCA AGGGCAATCA CACCATTGA TAAGACCAAG CCCATGAGCT	4380
CCATGCGTCC AGTATGAATC CCGAAACTTC TAGCCATATC AGGATTATCC CCTGTAGCAA	4440
TATAGGCTTG TCCGAGTTTA GTGTCCAAGA AAAAGAGCAT GAGAGCAATA ACAATACTCA	4500
CAAAGATGAG ACCTGTCAAG AGTTGATTCA AATCCGAATC AAAAGGCAAA ACATCCTGAA	4560
TTTGCTTGGT TCCAAGCAGG CCTAAATTCG CACGTCCCAT AATCAAGAGC ATGATTGAGT	4620
GACAAGAAGT CATCACCAAA ATCCCTGAGA GCAAGGTTGG GATCTTCCCT TTTGTATAAA	4680
GAAGGCCTGC TGCCATTCCA GCCAAACAAC CTGCTCCTAC AGCAACAAGT GTCGCTAAAA	4740
ATGGGTTCAC GCCTTTGGTT ATCAAAGTGA CAGCAACAGC TCCCCAAGA GGAAGGAAC	4800
CTTCTGTCGT CATATCTGGA AAGTTTAAAA TCCTAAATGT CATAAAGATT CCCAGACCTA	4860
GAATAGCCCA GACAAATCCT TGAGAAATAA TGGAACAAT CATATTTTAT TTAATCCTTT	4920

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CTATATTCAT CTTTTTAAAA AATGGGAAGA GTCTCCTCCT CCCTACCTTA TTTATTGAT	4980
GACTTGTCTT GCTTCTTTGA GAACAGACTC AGGAATAGTA ATACCTAGTT CTGTGTCTAT	5040
TTTTTTATTG ATGACTGACT TACCAGTTGA AAAGACATG ACTGGGGTAT CGGCTGGTTT	5100
TGCACCTTTC AAGACTTGCA CAATCATTTT ACCTGTTGCC ACACCAAGGT CATGTTGGTC	5160
AATTACAACCT GATGCCAAAC CACCTACTTC TACCATAGCT GTCGCACTGG GATAAATTGG	5220
TTTCTTAGAA CTTTGATTGC TAGAGACAAC CGTTGGAAAT CCTGATGCAA TGGTGTATC	5280
AATTGGAACC CAAATAGCAT CTACCTTGCT AGTCATAACA GTGACAGTTG AGGCAATTC	5340
ATTTGTTGAA GGAAC TGCA ATGTTTCCAC TGTCAGACCT GCCTTTTCAG CATAAGCCTT	5400
AAATTC	5406

(2) INFORMATION FOR SEQ ID NO: 167:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 9711 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 167:

CAGCTTGCTC TTA CTATTAT AGCAGATGTT ATAGCTGGAA TTATCTTGTA TTTCGTCTGC	60
AAATGGCTAG ATGGTAAGAA GTAGACCGAA TGACTAGCCT ATAAACACCC GTTAAATCGC	120
TAAGATACGT CAAAAAAGCC CTTAACTATG GCACTAGTTA GGGGCTTTGG TGTCTTAATG	180
AACCTTATAC ACTAACTACA TTCTAGCATA TAAGCCCAGA TATTTCAAGA GTTTTATTTA	240
TTGTTTAAAG TTCTGAAAGG TCTATAATGA AGTTAGCCAT CTAGTATCAA AAAACCGACT	300
AGCTCTTATG AACTAGTCGA TTTCTCATCA ATGCGCCAAC ATTTCTTGGG CGATTTCTTG	360
GCCAGATAGG TTATCTGGGT AGTAGGTTGG CCAGTTGTCC ATTTCTTCAA AGAGGGCTTC	420
TTGGCTTG TG CCTCCAAAGA AGATATGGAA ATGTTCTGCC TTAAC TGGGG CAACATTG TG	480
GTCACTAAAC TGAACATACT TGAATTGTCC AGCGTCAGCA TCTGTGGCTT CAAAGAGGAA	540
ACGCACGCCA CGATTGCCTT TCTTGTAAGT CAAAATTTTC TTACCGACAT ACTTGTAAGT	600
GTATTTCTTG CTTGTGCCAC CTTGAACAAA TTCCATAGTA TTATCAGTAA TGTTAATCTT	660
AGTCACATCT GTATGATAGC CTTTGTGATA GTAAGCCTTG TACTCAGCCT GGGTCATCTT	720
ACCAGTCAAC TTAGCCTTGT AGTCAAAGAC TTGGTCAAAC GTGCCGTCTT CAAGGAAAGG	780
ATAAACTGAT TGCCAGTTAC CTGCATAGTC ACTCAAGGTG CGGTCCTTGA CAGCTGCATC	840
CTCGAAGTAA CCATTTTGGA CTGTCTTGGT ATCCTCTGCC TTTTCAGGTT CAATTGCTGG	900

1071

GCCTTCTTGG TCTGTTGTTT GTTTCAAAGC CTTGAGGTTT TTCTCCATCA CGGAAATGTA	960
GTTTTCTCCA GCCTTGGTGT CCTCTTCTGT CAGACTTTCT AAAGGATTGA GGACATCAGT	1020
TTTGACACCT GCTTCTTTTG AAAGTGTGTT AGCAAGGGCT TGTGAGGCAT TTCTTCAAAA	1080
TAGATATAGG CGATTTTATT TTTCTTGACA TACTCTGTCA ATTCTGCCAA GCGAGCAGCT	1140
GATGGCTCTG CATCTGGAGA AAGTCCTGAG ATTGCGACTT GTTTGAGTCC ATAGTCCAAG	1200
GCAAGATAGT TAAAGGCTGC GTGTTGAGTC ACAAAGCTCT TTTGTTTTCG TTGAGACAAA	1260
CCTTCTCGCT AAGCCTTATC CAAGGCTTGC AATTTTTTCG TATAGGCAGC TGCATTCTTC	1320
TCAAAGGTCT CTTTTTTATC AGGATAATCT GCTGACAAGC TGTCGCGGAT GTGCTCTACT	1380
AGTTTAAATGG CACGAACTGG TGATAACCAA ACATGGGGGT CAAACTCATG GTGATGACCT	1440
TCTTCTCCAT GGTCAATGGT TCCCTCTTCT TCCTCGCCAC CTGGCAAGAG CAACATATCG	1500
CCTGTGCGCT TGATGGTTTT CACTTTTTTC TTATCCAAGG TATCTAGCAA TTTAGGTACC	1560
CATGTTTCCA TGTTTTTATC TTCATAAAGC AAGGTATCTG CATCTTGGAT TTTGGCAACT	1620
GCCTTGGCAG ATGGTTCGTA TTCATGAGGT TCTGTCCCAG CACCGATTAG GAGTTCTACA	1680
TTAGCCGTAT CTCCTGCGAC TTGCTTGGTA AATTCATAGA CAGGGTAAAA GGTGTGCACG	1740
ATATTGAGTT TACCATCTGC CTGTTTTTGA TTGGAACAAG CCACTAAAAA CAAGGCACAT	1800
AGACTGGCTA GTAATAAGCT AATTTTTTTC ACGTTCGTCT CCTATTGAT AAAACGTCTT	1860
ACTAACTGA TTAGTATAAA GACAGTTACA AAAATAATGG TAATACTTGC ACTTGCAGGT	1920
GTTTCTGCAT AGTAGGAAAT GTAAAGTCTT GCTACCATT CCAAAAAGCC AATCGCACTG	1980
GCAAGCAGCA TAACCGATTT AAAGTTTTTC CCCAGACGCA GGGCAATACT AGCTGGCAAG	2040
ACCATAATGG TCGATACCAG AAGAGCTCCT GCTGCAGGAA TCATAAGGGC AATAGCCACC	2100
CCTGTCACCA TGTTAAAAAG AATGGACATG GTACGAACTG GCAAGCCATC CACAAAGGCC	2160
GTATCTTCGT CAAAAGTTAA GATATACATA GGACGAAGAA AGAGAAAGGT CAAAATCAAA	2220
ACAACCGCCG CAATGACAAA GAGGGAAATG ACCTGTTCTT CACTGATAGT CACGATCGAA	2280
CCAAAGAGAT ATTGGTCCAA ACTCATTGAA CTCGAGCTTT TACCCTTGCT CATGACAATC	2340
AGAGAAACAG CCAGACCTGT TGACATGAGG ATAGCTGTCC CGATTTCAT AAAGCTCTTG	2400
TAAACCGTAC GGAGATACTC CAGAAAGACC GCCGCAATCA AGACAATGGC AATAGTAGAA	2460
ACAGTTGGAG AAATCCCCAA AACCAGACCA AAGGCTACAC CTGAAAGTGA GACGTGGCTA	2520
AGGGTATCAC TCATCAAAC CTGACGACGC AAGATGAGGA AGGTTCCTCA TACCGGTGAG	2580
AAAAGACTCA TAGCAATAAC CGCCAAAAAG GCGCGTTGTA TAAAGTCGTA AGATAATAAA	2640

1072

CTAAGCATGG CCCACCTCCT GGCCATTCTC ATGAACATTG AAACAACGCC ATGGCGAGTC	2700
TTGGTTACGG ACTAGATGAA TATTGCGATC CGCATAATCC TTAACCTCTT CAGGGTCATG	2760
GGTAATCATC AAAACAGCCT TGCCATGATG ATGGGCGCTG TGGTGCATGA GTTCGTAAAA	2820
TTCATTTTTA CTTCCTGCAT CCATCCCCGT TGTCGGCTCG TCTAGGATAA ACACATCAGG	2880
GTCAGAAGCA AACATACGCG CAATTACCGC TCGCTGCTTT TGTCCCCCAG ATAGAGACCC	2940
CAAGCGTTTG TCTCGATGTT CCCACATGCC AACTGAGTCC AGACTAGCCT TGATATGCTC	3000
CTCATCATGA GCATTCAAAC GACGGAACCA GCCTTTTCTC GGATAGCGAC CCGACTTGAC	3060
AAATTCATAG ACCGTACTTG GAAAACCAGC ATTAAACTG GCAATTTGTT GAGGAAGATA	3120
GGCTATTCTC AATTTCTTAC CTTGCGTATT TGTCTTTGAA ATAGCCACCT TTCCAATGCG	3180
TGGTTGCAGA ATTCCAAGAC TAGCCTTGAT GAGCGTCGTC TTAGCCGCTC CATTTTCCCC	3240
AGTCAAGGTA ACAAATTCCC CACTATCAAC ACAATAATTG ATATGTTCAA GAACAGGCTC	3300
CTTATCATAA TAGAAGGACA AATCCTCTAC CGTAATATAT CTCATTATTT GATTTCTCCT	3360
ACTAAAGCAG TCAAAAACCG CTGAATCACT TTTTGTTCAT TTGGAGTAAA CTGAGTCGCC	3420
ACTTGTTTCAT AGGTTAAAAG TGTATGCTCA TGGTGATGGT GGTGCTCCTC AGCGATTGGA	3480
CGAGCCAAGT CAGTCAACTG ATAAAAATC ACACGCGCAT CTTTAGAATC TTTAGATGTT	3540
TCCAACATCC CTTCCTTGAC CAAAGACTTA ATGGCCTTGG TAACTGCCGC CTGACTGACA	3600
TTGAGACGAC GGGCCAATTC TGAATTTGTT AAAGATTCCT CTGACAAGAG CATAAGGATA	3660
TGCTCCTGAG TATTGGTCAG GGCCACCTCG CTAGTGCAAT GACCTATTAG GATTTTCATGC	3720
TGATTTTCCG CCTGCAAAAT CACCTCATTC AAAAAAGCAT TGATATCCTT TGCTAGCTGT	3780
CTCATATCTG ACTCCTTTCC TTTTAGACTT CTCTTTTTTA AGAGAAAAAT ACTATTCTTT	3840
GACATTTTGT TTACCACTTA ATTATATCAC AAGCAAAAAA AGAGTCAAGA AAAAACGTGA	3900
AAACTAGTTT CATTCTTGAA CTCTTCTATA TTATATTATC TATTGAAATT CTTTGACATC	3960
TCCATCATAA GTCGCCCAAT CTTTGCTGAA AAAGCGCTCA TTCAGATGGT AAGTCGGAGC	4020
TGGTGTGGGA TTGGATAGGA AAGGATCAAC TGCCTTGTC AAGCCAACC AACCCAACCA	4080
ACCAAGGTGA ATGGTGTCTT TCATAAAGAA AGGCTCCCCG CCGTCCTTAG AAAAATCTGC	4140
TATATTGGTA AAACCTTGAC TTTCTAACTG GTAGCGAATC TTCTGCACCG TTTGTTGGTA	4200
CATATCCTCT CGTAGACCAG CATAGTTCAT CCATTTTTTA TTAACAGGTG GAATGATAAA	4260
AATCGGGTTT ACCTTAGATT TAGAAAACCTG TGTAAAAACC AACTGCAAGT CATTATACTC	4320
TGGCGACTTG AGATAGGTAA AGCTTTTCTG AGAATCCTTT AATTTCTTCA AATCCTTCTT	4380
GATCTGCTCA TTATAGAAAT AATTTTCCAT TCCCATCTCA TTATTGGAAG TATTTTTC	4440

1073

AGCATCTGCT TTGACAACAT CTTCTATTGC CTGATAAGAA AACTGGTCTG GCAAGATTTT	4500
TAAATACTTA GCTACATGCT TATCGTAGTT AACATAGCCT CTAACCGAAA ACTGACCAAA	4560
AAAGGAAGCT TGGCGTTCAT TAAAACGAGC CAATAATTCA ATCATTTCAT TGTCTGCTGT	4620
CGACAATTCT TCTTTACTTG CCAACTTCTG AACCAGGTCC TTCATAGCTA CGTTTGGGAA	4680
CTGTTGCAGT AAGCGAGTCG CTGCATATTG ACTAGCCTGA TCCCCAGATT GATGTTTCAG	4740
AAAAGTAGTC AACTGGTCTC CATTAATACTA CTGCTGGAAG GCTGCTGGAT CATAGCCATT	4800
TTTACTGAAC CACTGAGGTG AGATAACATA CACAACCTGT TTATTCTCCA GCTGTGGTAA	4860
CATCTGTTGC ATTCCAAAAT ATTGGTTAAG CGATGCAGCT CCCCCCTGTC CTAAAAGATA	4920
AGGACGGTAG GAACGATTGT ATTTCTCAGC TAATACCGCA GGATGAGCAC CGTCAAAACG	4980
AAGCCATTCA CTAGAGCCAA AGAAGGGAAC AAAACGCACA TTTGGATCAG ATAGTGCTCT	5040
GACTTTTGA CTTGCTCCT TAAAAGTATC GATAGTAGTA GCCACTGCTG AACGCTTTTC	5100
AGCTCCTAGA TTATGATGCA TCTCAGTAGG ATAAAAGAAA ATGAGCAGAA AAACCAACAA	5160
ACCAGCGATC AAGACCGGTC CGAAGATCAT CCATAAGCGT TTAAGCATTT TGTAGCTCCA	5220
CAATACCAGC TATGATTTTA TTAGCTGTAT TCCAGTCGTC ACGACCAAAC TCTGTTACAG	5280
GGACACGAAT GTCAAAACGG TTCTCAATCT CCACAATCAA CTCAACCGTT CCCATACTAT	5340
CCAAGACACC TGCATCAAAA AGATCTTCAT CCATCATGTC AGAAACATCT TCCATAAACA	5400
ACTCATCAAT AATTTCAATA ACTTCTGATT TGATATCCAT ATTTTATTTT CTTTATTTT	5460
TTAAACCATA GATTATTCAA GAATCCAGAA AAGATTAGA ATGACAACAT GACAACATGG	5520
AAAGTGACAA CCATGCCAAG CAACTGAATC CAGCGATTCT CAGGTAGGGC AGCCTTCCCT	5580
GCTTTTTTCC GTTCCTTATT GAGCGTTTTT TTCTTGCGAA CCCAGGCATC ATTGATGACC	5640
AAGCCTAGTC CATGAAAGAG TCCATAGGCG ATATAGTACC AGGTCACACC ATGCCAAAAT	5700
CCCATAATCA GCATATTAC AATGTAGGCC ATGCTTGAGG TTACATTACG ATTTTAAAG	5760
ACTTCTTTC TGGTTAACAC CATCACCATT CGCATAAAGA CAAAGTCACG GAACCAGAAG	5820
GACAGACTCA TATGCCAGCG ATTCCAAAAC TCCTTTAAAT CCCTTGATAA AAAGGGCTTG	5880
TTAAAGTTGA TAGGGCTACG GATTCCCATC AAGTTTGAGA TGGCCAAAGC AAACATAGAA	5940
TAACCTGCAA AGTCAAAGAA GAGTTCCAGA CCAAAGTAT ACATAACTGC CAAGGCATAG	6000
AGATTAAAGA AGCCACCTGA CTGCAAGGCT AAATCTTCA GAGGAGGTAG TAAGGTCTCT	6060
CCTAAAACAT GAGCTAGGAT AAAGTTATAC AAAAGCCCC ACATGATATA GCGGACAGAT	6120
TCATCCAGCA TATCCATCAA CTCATCTCGC TCAGGAATAG CCTGATAATT TTCATTAAAT	6180

1074

CGCTTAAAGC GATCGATTGG ACCACTCGAG AAAGTTGGCA TGAAGAGAAG GAAACGGAGG	6240
AATTCCCAGA GGGTAAAATC CTTAATCACT CCATCTCTCA GCTCGATGAC AATTCCAACC	6300
GAACGAAAGG TCAGGTAAGA AATTCCCAAG AACCCAAGCA AAGACTGCGT TCCATTGATA	6360
GCTGGTTGCA CCTTGACAAA GATAATCGGA AGTAGGGACA GAAACTAAC TAAGTAGAAG	6420
ACCCACTTGC CATCCTTGCT TTTTCGATAA TGCTTGTAGA AAAGCAGGAG CAATATTTCC	6480
CAGCAAAGGT AAATACCCAA GGCAGCTAGT TGATTGGTCT TTCCACCCAC CAACATGGTG	6540
ACATAAAGA AGAGACTTAC CAACACTTCA TACCAGGCAA AGCGTTTCTT GAAAAAGAGA	6600
CCTATAAAGA TGGGCAAGGT TGCAGCAATC ACATAAACAA AATACTGAGG ATTGCCATAT	6660
GGCTCTAAAT GAGGAAGCTG TTGAAAAAC TCCATCATCT CTTATTCACC TCGTTAATCA	6720
ATCCTTTGAT GTCAATCTTT CCATTTGGAG TTAGTGGCAA ACTGTCTCGG TAAAGGAATT	6780
TAGATGGCAT CATATAGGAC ATCATGATGT CTGTCAGGTC TTCCTTGATG GCCTTGGTAA	6840
TATCGATATC TCGCTCAAAC TGCTCACGAA CACCGTCTTT TAAGATGACA TAAGCCAATA	6900
GATTTTGTAC CTTGTGGTCC TTGTTATAGC GCGGTACTGC GACAGCAGAT TCGATAAAGC	6960
GAGACTTGTT GAGGTTTGA GAGACATCTT CTAATCAAT GCGGTAACCG TTAAACTTAA	7020
TCTGGAAGTC CATGCGTCCG CCGTAGAGAA GCAAGCCCTC ATCTGTCATG GTTCCCACAT	7080
CGCCTGTGTG ATAGGCTGGC AGATCTTCAA ACTCAAAGAA GGCTTCTGCT GTTTTTCAG	7140
GATTGTTTAT ATAACCTTTT GAAACAGCTG GCCCAGAAAC AATGATTTCT CCCTGCTCAC	7200
CATTGGCAG TTTATTTCTT TCCTCGTCAA TGATAAAGGT TGGAGAATCA GCCTTGGTAT	7260
AGCCGATTGG TAGGCGTTTG AGAGTCGCTA ACATCTCGTC TGTACGGCA ACTGCTGACA	7320
GAGCTACTGT CGCTTCTGTT GGGCCGTAAG CATTGATGAT ACGGGCATTT GGGAAACGCT	7380
CGCGCAGTTT TTGAGCTGTT TTGACCGTCA ATTCTTCACC ATCAAAGTAG AAATGCGTGA	7440
TTCCAGGCAT TTTCTCACTG TTGAAGTATT CAGACAACAT GGCCATATCT GCAAAGGATG	7500
GTGTTGATGT CCAGATAGCG ATTGGCAATG AAAAGATAGC CGCAAAGAGT TGCTTAAAT	7560
CCTGAGTGAT GACTGAAGGA AGAGTGAAAA GCGTACCACC AAGTGCCAAG GTCGGTGCCC	7620
AATACATGAC AGACAAGTCA AAAGAATAAG GTGGCTGTGC CAGCATTTGC GGACGACTCG	7680
GTGTCGCAAA TTCCTTATCC GTAATCATCC AGTTTGTAAG GCTGAGGAGA TTATCATGTG	7740
AAATCTGCAC TCCCTTAGGC TTACCAGTCG TACCAGAAGT AAAGATAATG TAGTAATTAT	7800
CATCTCCCTT GACTGGATGC GTGATTTTAT AGTTATTTCC TTGGGCAAAG GCTTCTTGAA	7860
CCTGAGCTAG ATTTATCATT GGTGTAGAAA CCTGCTCCAA GGGAAAGGCT GAAATGGCAA	7920
TAATCAAGCT TGGCTCTGCT ACTTCTAAAA TAGCTGAAAC TCGCTCCAAG GCCGAATGGC	7980

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TATCAATTGG AATGTAGGCA TGACCTGACT TAGTCAGCGC TACAAAGGTT GCCAACATTT	8040
CATATTCTTG GCCACCAAAA ACAACCACAG GAGACTTCTC AGGCAAGCCT AGTTGGTCAA	8100
TGACTGCAGC CAAACTATCC GAATCAGCCT TTAAATCGCC ATAAGTGTGT TCCTGCCCCA	8160
AAACATTATA GACAGGATAG CTAGGCTGTG TCTGAGCAA ATGCTCAATG GTTCAATCA	8220
TATCTGCTAT TGGTTTATTT GACACAATAG GGATTCTCCT TCAAGTAAA ATTCATTATA	8280
GATAAAGCTT CCTTGACCCT GACCAAGATA GCTAAAGAAG TAAAGCAGCC CTAGAAAGAT	8340
AAGAAAATAC AAGGCTGTCC GACCAAGAAA GAGGTACAAT TCTTTTCTCT GTTTCATCAA	8400
GAAAAACCAT TCATTTCTGT AATTTTTCGC TAAAATAAGA GTGATTCTTA CTAGCTTATT	8460
TTTCTACCAT TGTACCACTT TATATAGTAT CTTTCAATT GTTTACCGTA TGTTCCTAAT	8520
AGATTTCAGC TTATTTTAAG GATTATACAG TTTTCTATG TATATTTTCA AATAGAGTGA	8580
TCCTGCTTCA AAACCTCCATT TCAGGAGACA ATGAAGTAAA TCTTCCATA ATAAAACACA	8640
CAATATCAAG TTTTTCAC ACCTGATACT ATGCGCTTTT CTGATTTTTA AAGACTTTTT	8700
AACCACTCTC TCATTTAAAA TAATCTCGTC TGATATAAAT TAAAATAGCT TCTATCATCA	8760
GACAAATGGC TGATAGCCAA AAAGTATGTC TAATACCAA ACTCTCAGTA ATATAGCTCA	8820
TTAGCAAAAC AAATACTGAA AATGCTAATG TAGAAATCAC TTCAAGAACG GAATAGACAT	8880
TAATAAATG ATTTTCTCT ACTGTTTCCT GAAGAAATAC ACTTTCAGGA ACTTCTTTTA	8940
GTGCGATAA CATACCAACT AAAGCTGAAA ATAATAAAAA CATCTGTGCG TTGGGAAAAT	9000
ATAGAATAGT CAGTGTCACT ATTTCCATAG CTACAAGAGG AAAAAGAATA CTTTCCCCC	9060
AAATCATTCA TACCTCTCTC AACTAGATGT AACTTACAAA ACCCCTGACC TCATGAGCCA	9120
CTTCTTCCT CCTCATGAGG TCAGTTTAC TTTCTGCTGT TCCAGTATCG TTTTCTCTCG	9180
CTAGATTTCC TCAAAAGGGC AGACTCCTCC CTGGTGCGT CACACGATTT TTTTCTCTCG	9240
ACTGTTCTTT AATGCATCAT TAACGACGCT TTTCTTCTAG GTGGTTCATA AGGAACAGGA	9300
AGATTTCAGT TGACTTTTCT AATCCTAGAA TAAAGTGCTG AAAACAATTC GGAATAGGCA	9360
TAGAGACTAG ACAATTTGAG GAGCTGCTTG CGTCCTGTTC GAACACATTT TCCCACCACG	9420
TGAAGAAAAA GATGGCGGAA GCGTTTGATT GTTAAAGTTT GGAAGTCACC TCCAGCTAGA	9480
TGTTTGAGAA AAAGATAGAG ATTGTAGGCG ATACAGCTCA TCATCATACG AACTTCGTTT	9540
TTGATTAAGG TTGAATATC CGTTTATCG CCAAAAAATC CCTCCTTCAT CTCCTTGATG	9600
AAATTCCTCG CTTGACCACG TCCACGATAA AGCTGAAACT GTCTTGGcT gTTCCACTCG	9660
TCATATTTGT AACGAGAGAA ATAACATCGT AGAACAAGTA TCCTTCTTTT C	9711

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(2) INFORMATION FOR SEQ ID NO: 168:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 3025 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 168:

CCCCTTTGTC AAAACTGTAA AATTAACGAC TCAACAATTC ATCTTTACAC CAATCTCAAT	60
GGAAAACAAA AACAAATTGA CCTCTGTCAA AACTGCTATA AGATTATCAA AACAGATCCT	120
AACAATAGCC TCTTCAAAGG TATGACGGAT CTGAACAATC GTGACTTCGA TCCCTTTGGT	180
GATTTCTTCA ATGATCTAAA CAATTTCAGA CCTTCTAGCA ATACTCCTCC TATTCCCCCA	240
ACCCAATCAG GTGGAGGTTA CGGTGGAAC GCGGTTATG GTTCCCAAAA TCGTGATCT	300
GCTCAAATC CGCCACCTAG CCAAGAAAA GGCCTGCTGG AAGAATTTGG TATTAATGTA	360
ACTGAAATG CCCGTCGTGG AGACATTGAC CCCGTTATTG GCGCGACGA TGAGATTATC	420
CGTGTCATCG AGATTCTCAA TCGTAGAACC AAGAATAATC CTGTCCTTAT CGGTGAACCT	480
GGTGTCGGAA AAACGGCCGT TGTCGAAGGT CTAGCTCAGA AAATTGTCGA TGGCGATGTG	540
CCACATAAAC TCCAAGGTAA ACAAGTCATC CGTCTGGATG TGGTTAGCTT AGTTCAAGGA	600
ACGGGGATTC GAGGACAATT TGAAGAACGC ATGCAAAAAC TCATGGAAGA AATTCGCAAA	660
CGTGAAGACA TCATCCTCTT TATCGATGAA ATCCATGAAA TTGTTGGTGC TGGTTCTGCG	720
AGTGATGGTA ATATGGACGC AGGAAATATC CTCAAGCCAG CCCTTGCTCG TGGAGAACTG	780
CAACTAGTCG GTGCTACTAC CCTCAATGAA TACCGTATCA TTGAAAAGGA TGCTGCCCTC	840
GAGCGTCGTA TGCAGCCTGT TAAAGTCGAT GAACCAACGG TGGACGAAAC AATCACTATT	900
CTCAAAGGGA TTCAAAGAA ATACGAAGAT TACCACCACG TTCAATATAC AGATGCTGCG	960
ATTGAAGCAG CTGCAACTCT TTCCAATCGC TACATCCAAG ATCGCTTCTT GCCTGACAAG	1020
GCCATTGACC TCCTAGATGA AGCTGGTTCT AAGATGAACT TGACCTTGAA TTTGTGGAT	1080
CCTAAAGTAA TTGATCAGCG CTTGATTGAG GCTGAAAATC TCAAGTCTCA AGCTACACGA	1140
GAAGAAGATT TTGAGAAGGC GGCCTACTTC CGCGACCAGA TTGCCAAGTA TAAGGAAATG	1200
CAAAAGAAAA AGATCACAGA CCAGGATACT CCTAGCATCA GCGAGAAAAC TATTGAGCAC	1260
ATTATCGAGC AGAAAACCAA TATCCCTGTT GGTGATTTGA AAGAGAAAGA ACAATCTCAA	1320
CTCATCCATC TAGCCGAAGA TCTCAAGTCT CATGTTATTG GTCAAGATGA TGCAGTCGAT	1380
AAGATTGCCA AGGCTATTCTG CCGTAATCGT GTCGGACTTG GTACCCCTAA CCGCCCAATC	1440

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GGAAGCTTCC TCTTCGTTGG GCCAACTGGT GTCGGTAAGA CAGAACTTTC CAAACAAC TG	1500
GCTATCGAAC TTTTGGGTTT TGCTGATAGT ATGATTCGCT TTGATATGAG TGAATACATG	1560
GAAAAACATA GTGTGGCTAA GTTGGTCGGC GTCCTCCAG GTTATGTTGG CTATGATGAG	1620
GCTGGTCAAT TAACTGAAAA AGTTCGCCAC AATCCATATT CTCTCATCCT TCTCGATGAA	1680
GTGGA AAAAG CTCACCCAGA TGTATGCAC ATGTTTCTTC AAGTCTTGA CGATGGTCGT	1740
TTGACAGACG GGCAAGGACG CACCGTTAGC TTCAAGGATG CCATCATTAT CATGACCTCA	1800
AATGCAGGTA CAGGAAAGAC CGAAGCTAGC GTTGGATTG GTGCTGCTAG AGAAGGACGT	1860
ACCAATTCTG TCCTCGGTGA ACTCGGTAAC TTCTTTAGCC CAGAGTTTAT GAACCGTTTT	1920
GATGGCATT TCGAATTTAA GGCTCTCAGC AAGGATAACC TCCTTCAGAT TGTCGAGCTC	1980
ATGCTAGCAG ATGTTAACAA GCGCCTCTCT AGCAACAACA TTCGTTTGA TGTAAC TGAT	2040
AAGGTCAAGG AAAAGTTGGT TGACCTAGGT TATGATCCAA AAATGGGAGC ACGCCCACTT	2100
CGTCGGACTA TTCAAGACTA TATTGAGGAC ACAATCACTG ACTACTACCT TGAAAAATCCA	2160
AGCGAAAAAG ATCTCAAAGC AGTTATGACT AGCAAGGAA ACATTCAGAT TAAATCTGCC	2220
AAAAAGCTG AAGTTAAAAG TTCTGAAAA GAAAAATAA TCCTATAAAA AAGGAGTAGA	2280
AAATGAAATT TTTCTGCTTC TTTTCTTACT AAAATAACTG TAATTCTCTG ACAGCTTGCC	2340
CTTTGTCCAT TATGATATAT AGTAGACTGA ATCTGAAATA GTACGAAACA ATTGCTAAAA	2400
CATTATAGA AATTAAATTT ACTTTCCCAA TCGATTGTT CTCATCTTAT TTCAATCTGC	2460
TATAGTCAAT TGAAACAAGA ACAAGACAAA AGAGCCTCAT AAAAGGTATT GCAACTTGGT	2520
AATACCTTTT TGAGGTGCTT TTTGATATGA GCCCATGTTT TCTCAATAGG ATTGTA CTCA	2580
GGTGAGTAGG GAGGAAGAGG TAAAAGTTTA TACCCAACT CTTACACAA GAGTTCTAAC	2640
TTACCCATTC TATGGAATCT TGCATTATCC ATAATAATA CCGATGGTGT GGTAAATGTT	2700
GGTAAGAGAA ACTTCTGAAA CCAAGCTTCA AAAAAGTCGC TCGTCATCGT CTCTTCGTAA	2760
GTCATTGGAG CGATTAACTC ACCATTCA TTGTTAGACCT GCAACCAAAG AAATTCTCTG	2820
ATATCTTCTT CCAGATACTT TGCTCTTCT TAACTGACCT TTTAATGAGC GACCATATTC	2880
TCGATAAAAA TAAGTATCGA ATCCTGTTTC GTCAATCTAA ACAGGTGCTA GGTGCTTTAA	2940
ACTATTAAAA TTCTTAAGAA ATAAGGCTAC TTTTCTGGG TCTTGTTT CAT AGTAGGTGTA	3000
GTTCTTTTTT TTTTCGAGTG TAGCC	3025

(2) INFORMATION FOR SEQ ID NO: 169:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 4104 base pairs

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(B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 169:

TTTAAGGTTT TAAAAAAGT TTTCGAAAGG TTTCTTCTTT ATTTTTTAAG GGAGAGATAA	60
CGTTGATATC TAAATCGTGG TCAAAGCCGG CAATTTTCC TTTAGATGTG TATTGGTGAA	120
TATCATAATC TAAATCAGTT TTAGGACTGC TCTCCAAAA TCCTGAGTCT GAGCCGTAGA	180
CGGAATCCAA ACAGAGGTAA ACTTGCCTGT ATCAATACTG TGTCTTCCA TGAAGTAGAC	240
ACCAACGTAG ATGCCGATGT TTTTAGCACC CAGTGATGCT AGTTTGTCTC GAAAGTTTTC	300
GACACCTTCG TTCATATTAG ACATGGTTTT GTCTTCCACG TCAAGCCAAT AGTAACTAGG	360
GCTGTAAGGA GAGGCAGCAT TGTAAGAAAC TTCGCAGCC TTTTCCATTT CTGGGACACT	420
TTTTCCAGCT ACATAAGCGT AGACAGCAAC TGGGACATTC CGCTTTTGAA GTTCAGTGAT	480
ATGACTCTTA TAGGCCTTGT CTATTCCATT GATAAATGAA GCATCATTTT CTTTGTCTCGT	540
TTGAGCACCA CTGTGAACAC GAACAATAGC ACCTGAAATA TTTGTGAGA GGCATCGTA	600
GTTGATTTCC TCAGGACGCT GCCAGCCAGA GAGGTCAATA ATCGGTTTGT CTAAGTGTTT	660
CAAAGCCTGT GCTTCAATCT GTGCTATATT GGATTTTGT TTAACGATT GGCTGTCATT	720
AAGTGGGCGA TTGATGATTA AAATGAACAT CATAATCCCA AAAAACTAA ATAAAAAAG	780
TGGATGAATT TGTTTCTCA TATCTTATAA TTCTACCCTA AAAATCAAAA AAAATCAAAA	840
AAATGGGTTA AGGAAGAGAC TTTAGAGCAT TTTTTCATTC AAGAGTGCGG AATGATTTGA	900
AATATGGTAT AATAAAGGG AATTCTACA GAAAAGAGAA GATTATGTCA AATTTTGCCA	960
TTATTTTAGC AGCGGGTAAA GGGACTCGCA TGAAATCTGA TTTGCCAAAA GTTTTGACA	1020
AGGTTGCGGG TATTTCTATG TTGGAACATG TTTCCGTAG TGTGGGAGCT ATCCAACCTG	1080
AAAAGACAGT AACAGTTGTA GGACACAAGG CAGAATTGGT TGAGGAGGTC TTGGCTGGAC	1140
AGACAGAAAT TGTGACTCAA TCTGAACAGT TGGGAAGTGG TCATGCAGTT ATGATGACAG	1200
AGCCTATCTT AGAAGGTTTG TCAGGACACA CCTTGGTCAT TGCAGGAGAT ACTCCTTTAA	1260
TCACTGGTGA AAGCTTGAAA AACTTGATTG ATTTCCATAT CAATCATAAA AATGTGGCCA	1320
CTATCTTGAC TGCTGAAACG GATAATCCTT TTGGTTATGG ACGAATTGTT CGTAATGACA	1380
ATGCTGAGGT TCTTCGTATT GTTGAGCAGA AGGATGCTAC AGATTTTGAA AAGCAAATCA	1440
AGGAAATCAA CACTGGAACA TACGTCTTTG ACAACGAGCG TTTGTTTGAG GCTTTGAAAA	1500
ATATCAATAC CAATAACGCT CAAGGCGAAT ACTATATTAC AGACGTCATT GGTATTTTCC	1560

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GTGAAACTGG TGAAAAAGTT GCGCCTTATA CTTTGAAAGA TTTTGATGAA AGTCTTGGGG	1620
TAAATGACCG TGTGGCGCTT GCGACAGCTG AGTCAGTTAT GCGTCGTCGC ATCAATCATA	1680
AACACATGGT CAACGGTGTT AGCTTTGTCA ATCCAGAAGC AACTTATATC GATATTGATG	1740
TTGAGATTGC TTCGGAAGTT CAAATCGAAG CCAATGTTAC CTTGAAAGGG CAAACGAAAA	1800
TTGGTGCTGA GACTGTTTGT ACAAACGGTA CTTATGTAGT GGACAGCACT ATCGGAGCAG	1860
GAGCGGTCAT TACCAATTCT ATGATTGAGG AAAGTAGTGT TGCAGACGGT GTGATAGTCG	1920
GTCCTTATGC TCACATTCGT CCAAAATCAA GTCTGGGTGC CCAAGTTCAT ATTGGTAACT	1980
TTGTTGAGGT GAAAGGATCT TCAATCGGTG AGAATACCAA GGCTGGTCAT TTGACTTATA	2040
TCGGAAACTG TGAAGTGGGA AGCAACGTTA ATTTCCGTGC TGGAACTATT ACAGTCAACT	2100
ATGACGGCAA AAACAAATAC AAGACAGTCA TTGGAACAA TGTCTTTGTT GGTTCAAATT	2160
CAACCATTAT TGCACCAGTA GAACTTGGTG ACAATTCCCT CGTTGGTGCT GGTTCAACTA	2220
TTACTAAAGA CGTGCCAGCA GATGCTATTG CTATTGGTCG CGGTCGTCAG ATCAATAAAG	2280
ACGAATATGC AACACGTCTT CCTCATCATC CTAAGAACCA GTAGGAGCCT ATCATGGAGT	2340
TTGAAGAAAA AACGCTTAGC CGAAAAGAAA TCTATCAAGG ACCAATATTT AACTGGTCC	2400
AAGATCAGGT TGAATTACCA GAAGGCAAGG GAACTGCCCC ACGGGATTTG ATTTTCCACA	2460
ATGGGGCTGT CTGTGTTTGA CGAGTAACGG ATGAACAAAA ACTTATCTTG GTCAAGCAGT	2520
ACCGCAAAGC TATCGAGGCT GTCTCTTACG AAATTCACG CGGAAAATTG GAAGTAGGAG	2580
AAAACACAGC CCCTGTGGCA GCTGCCCTTC GTGAATTAGA GGAAGAAACA GCCTATACAG	2640
GGAAATTAGA ACTCTTGAC GATTTTATT CAGCTATTGG CTTTGTGAAT GAGAAGTTAA	2700
AACTATATTT AGCAAGCGAT TTGACAAAAG TGGAAAATCC GCGTCCGCAG GATGAGGATG	2760
AAACCTTGGA AGTCCTTGAA GTGAGCTTAG AAGAAGCGAA AGAATTAATC CAATCAGGTC	2820
ATATCTGTGA TGCCAAGACA ATTATGGCTG TTCAGTATTG GGAGTTGCAG AAAAAATAGA	2880
GGAGGTCAGT ATGGGTAAAT CTTTATTAAC GGATGAAATG ATTGAAAGAG CTAATAGAGG	2940
CGAAAAAATT TCAGGTCCTC CTTTGCTAGA TGATAATGAG GAAACTAAGA TTTTACCAAC	3000
CTCTTCTTCC CGTTTTGGTT ATGCCAATCC TAAGGATCAT GGTTTTAGCC AGGAAACCTT	3060
GAAGATTGAG GTCGAACCAT CTATTCATAA AAGCCGTCGT ATTGAAAATA CCAAGAGAAA	3120
TGTCTTCAAT TCTAAGTTGA ATAAAACTT ATTTGCGGTC ATCTTTCTCT TGATTTTGCT	3180
TGTTTTAGCA ATGAACTTT TGTAATAGAA AAGGAATTGA AATGAAAATA GGAATTATTG	3240
CTGCTATGCC AGAAGAACTG GCTTATCTGG TCCAGCATTT AGATAATGCC CAGGAGCAAG	3300

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TTGTTTTTGG GAATACCTAT CATACAGGAA CCATTGCTTC TCATGAAGTC GTTCTTGTAG	3360
AAAGTGGAAT TGGTAAGGTC ATGTCTGCTA TGAGTGTGGC GATTTTGGCT GATCATTTCC	3420
AGGTGGATGC CCTTATTAAT ACGGGTTCAG CTGGGGCAGT AGCAGAAGGT ATCGCTGTTG	3480
GGGATGTCGT GATTGCTGAC AAATTAGCCT ATCATGACGT GGATGTCACA GCTTTTGGCT	3540
ATGCTTATGG ACAAATGGCG CAACAACCGC TTTATTTCTGA ATCAGACAAA ACCTTTGTTG	3600
CTCAAATCCA AAAGAGTTTA TCTCAATTGG ACCAAAACCTG GCATCTTGGT TTGATTGCTA	3660
CAGGAGATAG TTTTGTGCA GGAAATGACA AGATAGAAGC GATTAAAGTCC CATTTCCCAG	3720
AAGTTTTAGC CGTGGAGATG GAGGGGGCAG CTATTGCTCA AGCAGCGCAT GCCCTCAATC	3780
TCCCAGTCTT AGTCATCCGA GCTATGAGTG ACAATGCCAA CCATGAAGCA AACATCTTTT	3840
TTGATGAGTT TATTATCGAA GCTGGACGTC GCTCTGCCCA AGTCTTGTG ACCTTTTGA	3900
AGGCTTTAGA TTAAGCGGAA ATTTGACAGT TTTTCTAGCT TATGATAAGA TTTAAGTAA	3960
GAAAAGCTAG AAAACGTTTC AGAGGATATT ATGAGTATTG AAATGACCGT CAGTGAGATT	4020
GCAGAGGTCT TAGGATTATC TCGCCAAGCA ATCAATAACC GTGTCAAAGA ATTACCAGAA	4080
GAAGACACAG ATAAAAATGA CAAG	4104

(2) INFORMATION FOR SEQ ID NO: 170:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 8876 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 170:

CACGGATAGG CTCGGCTTTC ATCAGTCCTC AGGCTGATTT ACTAATAGCA ACTTTCCTCG	60
ACAAAGTCCA CAGCGATACG TnTGGGTATC AATCCTACGC TTACGCTGAT ACCTTTGCTG	120
GCAGGATTGG CAACGATAGA GCTTGATTGG CTGGAGTTA CTATTGGGCA AGGATGGTAC	180
AAACCGTAAT CCATCCACTG CTTTCAACAG TTCCTTAAAA TCCCGATCCT TGTGTTGATA	240
GCCTTTCCTT TGAAAATAGA GGTGATAATG ACAGAGTTCA TGTCGGACAA TTTTCCTAAA	300
AACGTCCAAC CCCAGTTCCT GATAAACCTT GGGATTAAAA TCCAAATGCC CATCTTTGGG	360
GAAAAATCGC CCACCTGTCG AACGTAGACG CCTATTCCAC TGGACATGAT GGATAAAAGG	420
TCTGCCGAAG TCTTCTAGTG AAACCTGCTT GACGTAATCA GTCAGTTTCA TTTGGAGCTA	480
GGAGAGACAG ATTAACCTTT TCACGTTTCAG TATCAATTTT CTTAACCCAA ACGCTCACCA	540
AATCTCCAAC TGCCACCACT TGA CTAGGGT GTTTGATAAA CTGCGACTC ATATGGGAAA	600

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TATGGATGAG ACCGTCCTCA TGAATTCCGA TATCAACAAA AGCACCGAAA TCAACAACGT	660
TACGCACCAC TCCTTCTAGC TTTTGTCCAA CCACTAAGTC CTTGATATCT AGGACATCTT	720
GGCGAaCACA GGTGCGTCAA AGGAATCACG GAAATCTCGA CCTGGTTTGA GAAGATCTGC	780
AATGATATCT TTAAGAGTTT CTGGACCAAG GTCTAACTCT TGCGCCATTT CCTTGACTGA	840
AAGCGACTTG AGTTTGCTTT GGGCTTCTTC GTTTAGGTCT TTAATATCTA AACGTTTGAA	900
GAGTTCCTTA ACTGCAGTGT AATTCTCTGG GTGAACCTCT GTATTATCAA GGATATTGCT	960
ACTTTCAGGG ATACGAAGGA AACCAGCAGC CTGCTCAAAG GCCTTGGCTC CCAGACGAGG	1020
AACTTTCTTG ATTTGGGCGC GTGAAGTGAT TTTTCCTTCT TCCTCGCGGT ATTTGACAAT	1080
ATTTTCAGAG ATAGTTTGT TGAGTCCAGC TACGTGTGAA AGAAGAGCTG GGCTAGCTGT	1140
ATTGACATTG ACACCAACTT GGTAAACCAC TGTATCGACA ACAAAGTCCA GACTCTCAGA	1200
TAGTTTCTTC TGA CTGACAT CGTGTGGTA TTGACCGACA CCAATTGACT TAGGATCGAT	1260
TTTGACCAAT TCCGCAAGAG GATCTTGCAA ACGACGGGCG ATAGAAATGG CAGAGCGTTT	1320
TTCAACGGTC AAGTCTGGAA ACTCCTGACG AGCAAGTTCG CTGGCAGAAT AGACAGAAGC	1380
ACCACTTTCA TTAACGATAA CATAGCTGAC TTCAGGGAAA TCTTTCAGAA CTTCCGCTAC	1440
AAAAGCTTCA CTTTCACGAC TGGCCGTTCC ATTTCCAATG GCAATAATCT CTACACGTA	1500
TTGACCAATT AAATCTGCTA AATCTTCTT GGGTCTCTCG ATTTGACGAG CTGATGCTGG	1560
TTTAACAGGA TAAATAACCT GAGTTGTCAG CATTTTCTCT GTTGCATCCA CGACAGCTAG	1620
CTTGGCACCT GTACGAAAGG CTGGGTCAA TCCAAGAACC ACGCGCCCTT TCAGTGGAGC	1680
AACCAAGAGG AGATTGCGCA GATTGTCAGA AAAAAGTTGG ATAGCTCCTT CTTAGCTTTT	1740
CTCAGTTAAT TCTGTCCGAA TACGACGCTC GATAGCAGGC AAGACCTTTT TCTTAACGGA	1800
TTGCTGAACA ACTTCATCAA TATAAGCAT TTTCACTTG AAACGAGTAG CAAAGAAGGC	1860
AAGAATACGG TCCGTCGCAT GTTCAAAACC GATCTTCAAG ACACCAAGTT TCTCCCCACG	1920
ATTGAGAGCC AAGGTACGAT AGCCTTGCA TGTCCAAC GTCTCTGAAA AATCATAATA	1980
AATCTGAAAA ACCTGCTTTT CATCAAGACT TTCATCCTTG GCTTGAGAAG TAAGTTTAGA	2040
GTGTCTCAGC ACTTCTGAT AAGTCATAGA ACGCAAGGTC ACATCTTCCG ATAAGGCTTC	2100
GACCAAAATA TCAACTGCAC CGGTCAAGGC TTCCTTGCCA GTCGCAAATC CTTACAGAC	2160
GAACTTTTCA GCTTCTTCT CTAAGTCAAC TATATTCTGC AAAATCAAGC GAGCAAGAGG	2220
AAAGAGTCCA GCTTCACGGG CAATGGTTGC CTTGGTACGA CGCTTTTCTT TATAAGGAAG	2280
ATAGAGTTCT TCAACGTCTG CTAATTTTTC GGCAACTAAG ATAGCTTCTT CCAATTCCTT	2340

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GGTCAACTTA CCTTGTCTT GAATCTTAGC TAAGACAGCT TCCTTACGGT CATTGAGATT	2400
TGTCAGACTT TTATCCAAAT CAATAATAGC CTTAATCGCC ACCTCATCCA GACTACCACT	2460
CATGTCCTTG CGATAACGCG CGATAAAGGG AATAGTCGCC CCTTCAGCTG TCAAACCTTAG	2520
AACGGTATCA ATTTGCTTTA ACGTCACTCC CAAATCCTGA GAGATTTTTT CATATTTTTT	2580
ATCCATAAAT CTATTATACC ACAAGCTAAA CGTTTCAAAT TAACTCGTAG AACATTTAAA	2640
AAATATGTAG GAAATAGATT TATATGCTAC AGCGCAATAA CTTGCACTTA AAGAGCATTG	2700
CCACCTTTTT TTAACCAAGC CATGATATCA AAAGTATTTA ATGGATCAGA CATAATAGCC	2760
AGTTCTGGAA GATGTCCTG ACCTGGAATA ACACATTGAC TTTTCAAATT TTTATATGGA	2820
CGATTGACTA AAATTAATTT ATTAGAATAA GGAAGATTAT CCATCTTATT TAAATTTCT	2880
TCACTAGCTG AATCTTTATT ATCAAATTTA AAATAAAGAT TATTCCAATT TATGCGTTTT	2940
TTTCTTTTTT CCCACTTAGT TCGTGCTTCT TCAATACTAG AATAATGTAG AAAATGAATA	3000
TCTATATCTC CTAAGTGCCC CAAAGGATAA ACTTCATGAG TCCAGCTCGG TGAAATAAGT	3060
TCCTCTTCGA AAACAAGTTC TTGTTCCATA TAATAACGAA AATGCTTTGT AAGTTTATAA	3120
TAATCATCAG GAAGAATAAA TAAACCAACA AAAGGTGTTT TATATTGAAA ACCAAGCTGT	3180
TTATAAATTA ATCCTCCAAC ACAATTATTA CTTATAATCG TAAAATCTAA TCTATCAAGC	3240
TCAAGAAAAG GGAAAATTCC TTTCTCTGCA GCTATTAAGT TATGATAAAC AATATCAGAA	3300
TCTAAATATT CACCGTCATT TTTTAACCAA GCACTAAAAT TTGCCAATTC TTGAATATAT	3360
TGTTTTTTTCG CTCTTTCTAT ATCATAGTTT TCTAAGACGG CGCAATCTTT GATTCTATTT	3420
TCATAATTTT CTAATATGAT TTTGTAGGAG TCTTTTAGAG GTTTAGCATC TATAACAGGT	3480
TTATAGATAT ATGTCGGGAA ATTAATATAG GTTGCAGTTT TAGAGTGAAT ATAAAGTCTC	3540
CAAATAAGGT TGTTTATATC AAATTGATTT ATTTTTCGTA AAAGCTTACT ATTGAATAAT	3600
TTTCCAAATA ATGAGCGATA TTGTTTCTTA ATTCGATGAT CTGTATCATC CATCTTTTGT	3660
AAAACCTGAA CATTCGTTAA ATTTTCTGTC AACCAATTAT CCCCCAAAA AGGATAAAAG	3720
TAAATACTC CATCAACCA ATCAGCAAAA TGACCAAGAA CAACATCAGA ATCGGATAAT	3780
TTTATCGCAT GATACATCTT TTCAAATGTC CAATCAAATA ATGAATCATT TGAAGATAGA	3840
AACGTAATAT AATCTCCTGT AATCATATCA GACAACTCAG CAAAAGAATT CTCATCTATA	3900
ATCTTAATAT TAAATGATAG ATTCATCTGT TGGCTAATGG AAGCTATCTC CTCTGTAGAT	3960
TGATTTACAA TAATAACTTC TATATCTTTT AATGTTTGTC TCTCCACTAT TGACAAAGAC	4020
TCTAATAAAC TATTTTATC TCCTTGATGT AACAAAACAA CACTAATGA GTAAGTCAGT	4080
TTGACTACCT CCCATAATTT TCTGATAATG ATTTTCTTTT TATTTAATTA TAGCACAATT	4140

1083

ATGATATATA TCAGGTAATA TCAAGCTATA TTATCTCTTA GCTACTCAAT TTGAAATTTT	4200
AAC TTTTCCC TTTTCCGCAA AATAATAGTA TAATAGAGGT AGAATCTAGA ATCGAGGTAC	4260
ACCTATGGCT GTCAAATTTA CAAAACGAGA CGACTTGGAC AAGATGTTTG AAGAGTTTGC	4320
TAAACTCCCT GATTTGAAAC AAGTTACTTT CCCTGATGAC AAAGAGAAAA AAGTCAAAGC	4380
AGAAAAGAAA AACTAGATGA CTGCTTTTCA ACAACTCCCA TCTAGTGATAC TTCAAAGTGG	4440
AGCCATTTTT CTCTCCATTA TCATTGAAGC CCTTCCCTTC GTTCTGATAG GAAGCATTGT	4500
CTCAGGGCTG ATTGAAGTTT ATATCACACC TGACAAGGTT TATCATTTTC TCCCTCGAAA	4560
TCGTGGGGG AGAATCTTTT TTGGGACCTT TGTCGGTATA CTTTTCCTT CTTGTGAATG	4620
TGGAATCGTC CCCATCATCA ATCGTTTTCT GGAAAAAAG GTTCCAAGTT ACACGGCCGT	4680
TCCTTTTCTT GTGACAGCAC CTGTTATCAA TCCCATTGTT CTTTTTGCGA CCTATTCTGC	4740
CTTTGGCAAC TCCTTCCATG TCGCCCTATT ACGAGCTCTG GGTTCATTTC TTGTGGCTGT	4800
AATACTAGGA ATTTTCTAG GATTTTCTG GCAAGAACCG ATTCAGAAAG AAAATCGTCT	4860
GGCTTGTCAT GAGCATGATT TTTCTTACTT GAGTTCTGCA AAAAAAGTTT TTCAAGTCTT	4920
TGTGCAGGCC ATTGATGAAT TTTTGTATAC GGGGCGTTAT TTGGTATTTG GCTGCCTCTT	4980
TGCTTCTATA ATACAGGTCT ACGTTCGAC TCGGATTCTG ACCTCTATCA GTGCGACCCC	5040
TCTTTTGGCC ATCCTGCTCT TGATGATTTT AGCCTTCTT CTTTCGCTCT GTAGTGAGGC	5100
GGATGCCTTT ATAGGTGCTT CTCTTCTCTC GAGTTTCGGT TTGGCACCAG TTCTGGCCTT	5160
TCTCGTCATT GGTCCAATGC TGGATATCAA AAATATTCTC ATGATGAAAA ATTACTTGAA	5220
AGCACGATTT ATCAGTCACT TCATAACAAT TGTAACCTTT GTCGTCTTAG TCTATTCTCT	5280
CTTGATTGGA GTTATCCTAT GATTCGATTT TTAGTTTTAG CTGGCTATTT TGAAGTACT	5340
ATTTACCTCC ATCTGTGCGG CAAACTAAAC CAGTACATCA ACATGCACTA TTCCTATCTG	5400
GCCTATATCT CCATGGTGCT TTCTTTTATC TTGGCTATCG TTCAATTGTA TATCTGGATG	5460
AAGCAAGTCA AAACCCACAG TCATCTGAAC AGCCGATTAG CCAAGATAAC GAGTATTTCT	5520
CTTCTGGCTA TTCCACTTGT CATCGGCTTA ACTTTCCCAA CTGTTAGCTT GGATTCTCAG	5580
ACTGTTTCTG CTAAAGGTTA TCATTTCCCC CTATCGGAAG GAACGGATCT AGCCATTTCAG	5640
ACAAGCGAAG GGACGACAAG CCAATATTTG AAACCAGATA CCAGTTCTTA TTTTCAAAA	5700
TCAGCCTATG AAAAGGAAAT GCGAACGGCG GCGGATAAAT ACTTATCCCA AGATAGTATT	5760
CAGATCACTA ATGAAAATA TATGGAAGTC ATGGAGGCTA TCTACGACTA TCCAGATGAG	5820
TTTGAGGGCA AGACAATCCA GTTTACAGGC TTTGTCTATA ACGACCCAG TCATGCCAAT	5880

1084

AGTCAATTTC	TGTTCCGATT	CGGCATTATC	CACTGTATCG	CAGATTCTGG	TGTCTATGGA	5940
TTGCTGACCA	AGGGCAATAC	CCGGCAGTAT	GAAAACAACA	CTTGGATAAC	AGCCAAAGGA	6000
AAACTGGTCA	ATCACTACCA	TAAAGAACTC	AAACAAAACC	TTCCAACCTT	GGAAATCGAC	6060
AGCTTTACCA	AAGTCGATAA	ACCAGAAAAT	CCCTATGTAT	ATAGAGCTTT	TTAAGAAAAT	6120
CAAGATAAAA	ACGAACAAGT	TCTCTTCTGA	ATAACAGAAA	AAGAGCCTGT	TCGTTTTTTG	6180
TTATATGAAA	ATTAGTGACT	TGTAGATTTT	CATCTTATAC	CATTCCCAGC	AATACAAGTA	6240
GCTCATAGAA	AATAAGCGAG	CCACTCATTC	ATTAGACTAG	CGATTTCTTT	AGGTGCTTGA	6300
GTATAAAGCT	CATGGCCAAA	GTTTTCTAAA	AAAATAGTAT	CAAAATAGTC	TGGCAATTCT	6360
TTTAGGGCTT	CCTCTCTCCA	TGTAGCTTCA	TTAGGATAGC	GAGGACTAAT	AAACAAGGTA	6420
TCTCCCACTT	CTCTCTPAAA	AGCTTGTATT	TTTCTCCGTA	GcGGAGTATC	GCTTCTATAT	6480
TTTCATAATT	TATAGCCAAC	TCATATCTAT	TATACTCAAC	ATTCCAGTGA	TAAGACTGTC	6540
TTACAGCTTT	CTCCATATTT	TCTGACCAAT	GCTTGTGCTC	AGATTTTCTT	TTAGAAGTAA	6600
GAACATCTAA	GTCCGAAACA	ATTTGAGATT	TGATATAATT	TTTAGTTTCC	TCTAACTCTG	6660
TATCCAAAGG	TAAAATCTTA	TCTAAATCTA	GATAGCCACC	ATCCAAAAGA	ATCAGTTTCT	6720
TTACTTCTTC	AAATTCGGAT	GCGAAATAAC	GAGCTAAATC	TCCTCCAAGA	GAATGGCCTA	6780
TCAGACAGAT	AGATTCTTCC	TCTACAATTT	CATTTTTTAA	CCATGATTTT	AATTCTGTTT	6840
CATCTCGAAG	ATGCTTTTCA	TATGGATTTA	GAAATAGAC	CTGCGAATCT	AGTTCTTGAA	6900
GAAATCCCTT	GCTATGATAG	GCATTGCTTC	CCAAACCGCC	AATAAAATAT	TTTTTCATTC	6960
TCTACTTAAT	ACTATGCTTA	TTCATCTTTT	GTTCAAAGAT	AGTTGTGATA	ATCTGACGCA	7020
ATTCTTCGCG	TTTTTTTCTT	GGAATCTCAC	CACTTGTTTG	AGCTACAGCG	TAGAGTTCAG	7080
GGTATTCAAT	TGAAATGCGT	TTAATCGTAC	GTGTTGTAGC	ATGTTTTCTG	ACAAAAACG	7140
GGATTGCGTT	AATCAAGTCT	TGTGGGACTA	GCGCCAGAAT	CTTCTCAGTA	GTTTCTTTGT	7200
CACTAATATT	AGACATTGTA	AGCCTTTTCT	TAATCATTTT	CTGTTCTTTT	TCTGTAAAAT	7260
CTTTTAATTC	CATTCGATTA	GTCTCCTAT	TTTCTCTAAG	TTAAATTATG	TACTAATACA	7320
GATGAAACTA	CAAAGAATAA	ACTTTAAGAA	ATCTTCTCAC	TGATAAGATT	TTAGCATTAG	7380
ACTTCCTGCG	AAACAAAATA	TGGTATAGTA	GTCTATGAA	TTATGAAGCA	AGTAAACAAC	7440
TAAGTGATGC	ACGATTTTAA	CGTCTTGTG	GTGTTGAGCG	CACGACTTTT	GAAGAGATAT	7500
TAGCTGTATT	AAAAACAGCT	TATCAACTTA	AACACGCAAA	AGGTGGACGA	AAACCTAAAT	7560
TAAGCCTAGA	AGACCTTCTT	ATGGCCACTC	TTCAATATGT	GCGAGAATAC	CGCACTTATG	7620
AAGAAATTGC	GGCTGATTTT	GGTATTCACG	AAAGCAACTT	AATCCGTCGG	AGCCAATGGG	7680

1085

TTTAAGTAAC TCTTGTCAA AGTGGTGTTA CGATTTC AAG AACTCCTCTC AGTTCTGAGG 7740
 ACACGGTAAT GATTGATAGC CATTCCCATC AATATCGTAT CTTTGGACAT AGCCAATAAA 7800
 TGTTTCATTT TTGCGTGGTT TCTGGCTATT AACGATTGAA ATAACCCACC AACTTATCAA 7860
 AAATAGAAAT AAAAATCCTA AGATTACTGT CATATCATAA CACTATTAAA GTTTAACCCA 7920
 CTTATCATTA TCCATGATAA AAGGCTTAGC CAGTCCCTCG CCTGTATAAT CCGCATACTT 7980
 GGTGCCCAA TACTTGTAGC AATCTTCCTT ACTAGCAAAT TTAATCGCTT GGTAGGGCTC 8040
 TTCGAAAGTC AATTTCTCTA CAAATAAGAA ACCGTCATCA GCAGGTACTA AGACCCCAAC 8100
 GTGGCCTACA AACAGATACT CGCCATCCAA ATTGTCGTGC AAGACTACAG ACAGCATTCG 8160
 AGCTTTTTCA TTGAATTGAA ATTGTGAGAA GAATGCTTCC ATCTTTTCAG CGTGAACCTT 8220
 GACATCTGTA GTTGACTCAG TTGGAAGTCT CGAAAATAGA ATATCAAACCT CTTCTTTATC 8280
 TTGTGAATCA AAGACCTTTC CTTTATCAAT CGCATCATTA TCTAGGAAAA GCAACTGGTC 8340
 ATTCTTTTCA AGCTTTGGAA TGGTGACTGA ATTTTTCAAA AGACAATAAC TATTGATACG 8400
 GCAGTTGGTC CCAACAAAAT CGCCCTTCTT TTGATTCCAG AGATGACTGA TTTTCTCAAC 8460
 ATCGTATTCG GTGTGAGTAA AGGAAGTGAA ATCTCTGAT AAGCCAGTTG AGCCGACAAT 8520
 GGTATTATAG TCATTAACGA GATTAAAAA TGCATCAACA CTATTGGAT CCAAGTGAGC 8580
 TGATAAGAGA GATTTGACCT CTCTGTACT TACCTGGTTG TTTAGGTTGG TGTATGAAGC 8640
 TTTCCATGGA ACTTTCGCTG AACTGCTTTG CCTTTGATTC GTCCCTCAG AAGTAGCATG 8700
 TTGTGTGTA CAAGCAGCCA AGCCTAAAAA CAAGGCTGAA CAGATTCCTA ATGTGGCTAA 8760
 TTTTCTTGAT TTCTTCATTT CTTTCTCCTA AATGTCTTGG ATTAAAGTTT CTTTAACTAT 8820
 TGCTTTACAG ATATTGATTA CTTTCTCATT TAATGTGTTT ATCGTCTTTC CTCCGG 8876

(2) INFORMATION FOR SEQ ID NO: 171:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 14736 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 171:

CGCAAACCTTT CGCGGTCGGA AGGTAGTTTT ATGACACGAT TTGAGATACG AGATGATTTC 60
 TATCTCGATG GAAAATCATT TAAGATTTTA TCTGGTGCCA TTCATTATTT TAGGGTTCCT 120
 CCAGAGGATT GGTATCATTC GCTCTATAAC TTGAAGGCTC TTGGTTTTAA TACGGTAGAG 180

1086

ACTTATGTTG CTTGGAATTT ACACGAGCCT TGTGAAGGTG AGTTTCATTT TGAAGGTGAT	240
CTGGATTTAG AGAAATTTCT CCAAATAGCG CAGGATTTGG GTCTCTACGC AATTGTGCGT	300
CCGTCTCCAT TTATCTGTGC GGAATGGGAA TTCGGTGGCT TACCAGCTTG GCTCTTGACC	360
AAGACATGC GAATTCGCTC ATCCGACCCA GCATATATCG AGGCAGTTGG TCGCTACTAT	420
GATCAGTTAT TGCCAAGACT GGTGCCTCGT TTGTTGGACA ATGGTGGCAA TATTCTCATG	480
ATGCAGGTTG AAAATGAGTA TGGTTCCTTAC GGAGAAGATA AGGCTTACCT GAGAGCGATT	540
CGACAGCTAA TGGAAGAGTG TGGCGTAACC TGTCCTCTCT TTACATCAGA TGGTCCATGG	600
CGAGCTACTC TGAAAGCTGG AACCTTAATT GAAGAGGACC TCTTTGTAAC AGGAAACTTT	660
GGTTCTAAGG CACCTTACAA CTTTTCGCAG ATGCAGGAAT TCTTTGATGA ACATGGTAAG	720
AAATGGCCAC TCATGTGTAT GGAGTTCCTGG GATGGTTGGT TCAATCGCTG GAAAGAACCG	780
ATTATCACAC GGGATCCTAA GGAATTGGCA GATGCAGTTC GAGAGTTTTT GGAACAAGGC	840
TCTATCAATC TTTACATGTT CCACGGTGGT ACAAACCTTG GTTTCATGAA TGGTTGCTCA	900
GCTCGAGGAA CTTTGGACCT GCCACAAGTT ACGTCTTATG ATTACGATGC CCTTCTGGAT	960
GAAGAAGGAA ATCCAACCTGC TAAATATCTT GCAGTCAAGA AGATGATGGC AACACATTTT	1020
TCAGAGTATC CGCAGTTGGA ACCACTCTAC AAAGAGAGTA TGGAGTTGGA TGCTATTCCA	1080
CTAGTTGAAA AAGTTTCTTT GTTTGAAACC TTAGATAGCT TGTCAAGTCC TGTAAGAAAGT	1140
CTCTATCCTC AAAAGATGGA GGAGCTGGGA CAAAGTTATG GCTACCTACT TTATCGAACA	1200
GAAACAACT GGGATGCAGA AGAAGAAAGA CTTCGTATCA TTGATGGTCG AGATAGGGCC	1260
CAGCTGTATG TCGATGGTCA GTGGGTAAA ACTCAATATC AGACAGAGAT TGGGAAGAT	1320
ATTTTTTATC AAGGTAAAA GAAAGGGCTA TCTAGGTTAG ATATCTTGAT AGAAAAATG	1380
GGGCGTGTCA ACTATGGGCA TAAGTTCTTA GCGGATACGC AACGTAAGGG AATTCGGACA	1440
GGGGTCTGTA AGGATCTGCA TTTCTTACTA AACTGGAAAC ACTATCCACT CCCACTAGAC	1500
AATCCTGAGA AAATTGATTT TTCAAAAGGA TGGACTCAAG GACAACCAGC CTTTACGCT	1560
TATGACTTTA CAGTCGAAGA GCCAAAAGAT ACTTACCTAG ACTTGCTGA GTTTGGTAAG	1620
GGGGTTGCCT TTGTCAATGG GCAGAATCTA GGACGTTTTT GGAACGTTGG CCCAACTCTC	1680
TCACTTTATA TCCCTCATAG CTATCTCAAG GAAGGTGCCA ACCGCATCAT TATCTTTGAA	1740
ACAGAAGGTC AATATAAAGA AGAGATTCAT TTAACTCGTA AACCTACACT AAAACATATA	1800
AAGGGGAAA ACTTATGACA ATTGTAGGAT GCCGTATTGA TGGACGTTTG ATCCACGGAC	1860
AAGTAGCCAA TCTTTGGGCT GGAAACTAA ATGTTTCACG CATTATGGTT GTAGACGACG	1920
AAGTTGTCAA CAACGATATT GAAAAGAGTG GTTTGAAACT TGCGACACCA CCAGGTGTGA	1980

1087

AATTGAGTAT TTTGCCAGTT GAGAAAGCTG CAGCCAATAT TCTTGGTGGC AAATACGATA	2040
GCCAACGTCT CTTTATCGTG GCTCGTAAAC CAGACCGCTT CCTTGGTTTG GTAGAAGCAG	2100
GTGTACCACT TGAAACCCCTT AATGTTGGGA ATATGTCTCA AACACCAGAA ACTCGTTCTA	2160
TTACACGTTC TATCAACGTA GTAGACAAGG ATGTGGAAGA CTTCCACAAA CTGGCAGAAA	2220
AAGGTGTTAA ACTTACTGCT CAGATGGTTC CAAATGATCC AATTTCAGAC TTTTGTAGCT	2280
TATTAAAATA GGAAAAAAT TTTTAGGAGG TCATTGTTAT GATACAATGG TGGCAAATTT	2340
TACTTCTCAC TTTGTACTCA GCTTATCAAA TCTGTGATGA GTTGACGATC GTTTCATCTG	2400
CAGGTTCCCC TGTATTTGCT GGTTCATTA CTGGTTAAT CATGGGAGAT GTGACTACTG	2460
GTTTACTTAT CGGTGGTAAC TTGCAACTGT TCGTTCCTGG GGTGGTACC TTCGGTGGTG	2520
CTTCTCGTAT CGACGCACT TCTGGTGCGG TTCTTGCAC ACCTTCTCTG TTTACAAGG	2580
AATTGATGCA CCGCTTGCCA TTACTACAAT CGCTGTACCA GTAGCAGCTC TCTTGACTTA	2640
CTTCGACGTT CTTGGTCGTA TGACTACTAC CTCTTCGCT CACCGTGTGG ATGCTGCAAT	2700
CGAACGCTTT GACTATAAAG GTATTGAACG CAACTACTTG CTTGGTGCGA TTCGGTGGGC	2760
TCTATCTCGT GCCCTTCCAG TCTTCTTTCG CCTTGCTTTT GGTGGTGCCT TTGTACAATC	2820
AGTAGTAGAC TTCGTTGAAG CCTACAAATG GGTGCGAT GGCTTGACAC TTGCAGGACG	2880
TATGCTTCCA GGTCTTGAT TTGCAATCTT GCTTCGTAC CTTCCAGTTA AACGTAACCT	2940
TCACTACCTT GCTATGGGAT TTGGTTTGAC AGCTATGTTG ACTGTTCTTT ACTCATATGT	3000
AACAGGTCTT GGTGGCGCTG TTGCTGGTAT CGTAGGTA CTTCCTGCTG AAGTTGCTGA	3060
AAAAATTGGT TTCGTGAACA ACTTCAAAGG TTTGTCTATG ATTGGTATTT CTATCGTAGG	3120
TATTTTCCTT GCAGTGCTTC ACTTCAAAAA TAGCCAAAA GTAGCTGTAG CAGCACCTTC	3180
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AAGATTTTAA TCAAATCAAC AAACGTAGCT TGTTTACTTT CCAATTAGGT TGGAACTACG	3300
AACGTATGCA AGCTTCTGGT TACCTTTACA TGATCTTGCC TCAGTTGCGT AAAATGTATG	3360
GTGATGGAAC TCCTGAATTG AAAGAAATGA TGAAAGTTCA TACTCAATTC TTCAATACTT	3420
CACCATTCCT CCATACCATT ATCGCTGGTT TTGACCTTGC CATGGAAGAA AAAGATGGTG	3480
TAGGTTCAAA AGACGCCGTT AACGGTATCA AGACAGGTTT GATGGGACCA TTCGCTCCTC	3540
TTGGGGATAC AATCTTTGGT TCACTTGATC CTGCTATCAT GGGGTGAGTC GCAGCAACTA	3600
TGGCTATCGC TGGCCAACCT TGGGGATCT TCCTTTGGAT TGCAGTTGCA GTAGCGTATG	3660
ACATCTTCCG TTGGAACAG TTGGAATTTG CTTACAAAGA AGGGGTTAAC CTTATCAACA	3720

1088

ACATGCAAAG TACCTTGACA GCTTTGATTG ACGCTGCATC TGTACTTGGT GTCTTCATGA	3780
TGGGTGCTCT TGTAGCAACA GTGATTAACT TTGAAATTTT TTACAAGTTG CCAATCGGTG	3840
AAAAGATGAT TGATTTCCAA GACATCTTGA ACCAAATCTT CCCACGTTTG CTTCCAGCAA	3900
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TCGGTATTAT TATCGTACTT GCTTTGGCTC TTTCTGCCCT TGGTCACTTT GCACTTGGA	4020
TGTAATTCCT TATGACTAAA TCATTAATTT TGGTGAGCCA TGGTCGCTTC TGTGAGGAGC	4080
TTAGAGGTAG CACAGAAATG ATTATGGGCC CACAAGACAA CATTTACACA GTAGCTCTTC	4140
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ATGATTTCTT AGTCTTTGCG GATCTTCTCG GTGGGACACC TTGTAATGTG GTGAGTCGCT	4260
TGATCATGGA AGGTCGTGAT ATTGACCTTT ACGCAGGGAT GAATCTTCCA ATGGTGATTG	4320
AATTTATCAA TGCAGCCTT ACAGGCGCAG ATGCGGACTA CAAGAGCCGT GCTGCAGAAA	4380
GCATTGTGAA AGTTAATGAC CTGTTAGCGG GCTTCGATGA TGACGAAGAT GAATAATACT	4440
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GCAGCCTTCC TACAAGAAAT CGCTGATAAA CATGACTATA TTAAGGTTAT CTTGACAGGT	4920
GCTGGGACTT CTGCTTATGT GGGAGATACC TTGCTACCTT ATTTTAAGGA AGTCTATGAC	4980
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GAAAGTTTGG CGACTGTTGA TTTGGCCAAA TCCTTGGTGG ATGAGCTTTA TCAAGTGACG	5160
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TTGCTCTTGC AACCAGCTGT CTCTAATGAT GCTGGATTG CCATGACTTC TAGCTTTACG	5280
TCTATGATGT TGACAACTCT CTTGGTCTTT GATCCTACAG AATTGCTGT TAAGTCTGAA	5340
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GAGCTCGTTG ATTTAGACTT TAACCGTGTG ATCTATCTAG GCGCTGGTCC TTTCTTTGGA	5460
CTTGCTCATG AAGCTCAGCT CAAGATTTTG GAATTAAGT CTGGTCAAGT TGCGACCATG	5520

1089

TATGAAAGCC CAGTTGGCTT CCGTCACGGT CCAAAATCTC TTATCAACGA CAATACAGTT	5580
GTTTTGGTCT TTGGTACAAC GACAGACTAC ACTCGTAAGT ACGACTTGGA CTGGTTTCGT	5640
GAAGTTGCTG GTGACCAGAT TGCTCGTCGT GTTGTCCTTT TGAGTGATCA AGCTTTTGGT	5700
CTTGAAAATG TCAAAGAAGT GGCCCTTGGT TGTGGCGGTG TCTTGAATGA TATTTACCGT	5760
GTCTTCCCTT ACATCGTTTA TGCCCAACTC TTTGCTTTAT TGACTTCACT CAAGGTAGAA	5820
AATAAACCAG ATACACCGTC TCCTACAGGT ACAGTAAACC GTGTAGTACA AGGTGTCATA	5880
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TATCAGATAA ACCATAGATT GTCAGTACGC TTTCTATGGT TTGTTTGCTT GAGAGAAATA	6000
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GGATGTCTTG GCCTATCGAT TTGAGACAGA CGGTGGCTAC CAACTTGAGG TTATGACTTA	6120
TGGTGCGACT ATCTTGCGCT ATGTCGCACC TGACAAGGCT GGAAATTTTG CCAATGTTAT	6180
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CAACCACAGC TATTTCAACT TGTCTGGTGA TTTACGCAG ACGATTGACC GTCATGTCTT	6600
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AGAAGCCAAC CGTGATGTGG TCAAACACGT CTACAATGGT ACCTTGTTGA AGGATATCTT	6720
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AGATGCCATT CACAGTGACC TTAAAGGCCA AGTCATTCTT AAAGCTGGTC AAACCTTCAC	7020
CAGTAAGACA CGTTATGAAC TTGTTGTGAA GTAAAAGAGT CATTGCGCCT ACTTTTGGGA	7080
GCTAGGAATA GGTACGCAGA GACAAATAGT AGGAAAATAT GATATAACTA AGCGTTGAAA	7140
GCTATCTGTT AATATAATAT TCAAACCTACA ATAAGGAGTA AGAAAGAAAC GAAGAAAATT	7200
GTATTTGCTA GTGCCTTGGC TTTGACCTTG GCTGGAGCAG TTTTGACAAA TGATGTTTTT	7260

1090

GCGAACGACA GACTTGTGGC AACACAAACT ACTGATGGTA AAAATGAAAA TGTATTGACC	7320
TCAGAGGTGC TAAAACCTTC TAGTGGCAAT GTTTTGGTTG GAATCAAAGG AGAATTTGTG	7380
GCTCCTCATC AACAACTCTAT TTTGGATGCC ATCAATGCTA TCTGTAAAGA AGCGGCTGAC	7440
GAAGGTTTGG TAGATAAGTA TGTCCCTATC AAATGATCAA CTGACCTAGA AAAGGCAGCT	7500
TTTGCCAGAG CTACAGAAGC ATCTATAACC ATGGATCATA CCCGTCTTTC TAGCAAAGAT	7560
CTTTGGAGTG CCTTTCCAAC TTCTAATAGT ATAATGGGAG AAAATTTGGC ATGGAATCAT	7620
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AATCTAATGG TAAATGGTAT TTCTATGAGT CTGGTGATGT GAAGACAGGT TGGGTGAAAA	8040
CAGATGGTAA ATGGTACTAT TTGAATGACT TAGGTGTCAT GCAGACTGGA TTTGTAAAT	8100
TTTCTGGTAG CTGGTATTAC TTGAGCAATT CAGGTGCTAT GTTTACAGGC TGGGGAACAG	8160
ATGGTAGCAG ATGGTTCTAC TTTGACGGCT CAGGAGCTAT GAAGACAGGC TGGTACAAGG	8220
AAAATGGCAC TTGGTATTAC CTTGACGAAG CAGGTATCAT GAAGACAGGT TGGTTTAAAG	8280
TCGGACCACA CTGGTACTAT GCCTACGGTT CAGGAGCTTT GGCTGTGAGC ACAACAACAC	8340
CAGATGGTTA CCGTGTAAT GGTAAATGGTG AATGGGTAAA CTAGGCTCAG GCCATAGGTA	8400
AAGCATTCAT CTTACTTAGC AAAAAGAATG AACGATAAGA AAGAGGTTGA TGGCGAACAT	8460
TGGCCTCTTT TGATTTATAA AGATTGGATT CTTGTGCGCT CAATTTCAGA CTTTCTATT	8520
GTAAGCTAAT ATTTTATAGC CCATTAAAAG CATAAGCGGT AATCTAATTT AAAAAATGCT	8580
GTAATTAGTC TGAAGTCCAC ACTTACTTGT TGAGATGTTA TCTCTGTTTT TTATCGTTA	8640
AATTTACTGT ATTTTATATA GTATGCAGAA TATTTTAAAG TATATTTCAA TAGAAATTTT	8700
TATCGATTTA TTGTATAATG ATAAGTAATT GTTGAAAAGT ACTCAGAAAA TTCCATACTA	8760
TATTATTTTT ATGTTTATAC TTTTATGCTA TAAAATATAG ATTGATATAA AGAATATAGA	8820
AAAAGCGAGG TTAATATGAG CCGAAAAAGC ATTGGTGAGA AACGCCATAG TTTCTCGATG	8880
AGAAAGTTGT CAGTGGGATT GGTATCAGTT ACTGTATCTA GTTCTTTTTT GATGAGTCAA	8940
GGGATTC AAT CGGTATCGGC CGATAATATG GAAAGTCCAA TTCATTATAA GTATATGACC	9000
GAGGGTAAAT TGACAGACGA GGAAAAATCC TTGCTGGTAG AGGCCCTTCC ACAACTGGCT	9060

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GAAGAATCAG ATGATACTTA TTA	TTACTTGGTT TATAGATCTC AACAGT	TTTTT ACCGAATACA	9120
GGTTTAAACC CAACTGTTGG TACT	TTTCCTT TTTACTGCAG GATTGAGCTT	GTTAGTTTTA	9180
TTGGTTTCTA AAAGGAAAAA TGGAA	AAGAA CGACTTGTTT ATTTTCTGCT	GTTGACTAGC	9240
ATGGGAGTTC AATTGTTGCC GGCC	AGTGCT TTTGGGTGA CCAGCCAGAT	TTTATCTGCC	9300
TATAATAGTC AGCTTTCTAT CGGAG	TCGGG GAACATTTAC CAGAGCCTCT	GAAAAATCGAA	9360
GGTTATCAAT ATATTGGTTA TATCA	AAACT AAGAAACAGG ATAATACAGA	GCTTTCAAGG	9420
ACAGTTGATG GGAAATACTC TGCT	CAAAGA GATAGTCAAC CAAACTCTAC	AAAAACATCA	9480
GATGTAGTTC ATTCAGCTGA TTTAG	AATGG AACCAAGGAC AGGGGAAGGT	TAGTTTACAA	9540
GGTGAAGCAT CAGGGGATGA TGGAC	TTTCA GAAAAATCTT CTATAGCAGC	AGACAATCTA	9600
TCTTCTAATG ATTCATTCCG AAGT	CAAGTT GAGCAGAATC CGGATCACAA	AGGAGAATCT	9660
GTAGTTCGAC CAACAGTGCC AGAAC	AAGGA AATCCTGTGT CTGCTACAAC	GGTGCAGAGT	9720
GCGGAAGAGG AAGTATTGGC GACG	ACAAAT GATCGACCAG AGTATAAACT	TCCATTGGAA	9780
ACCAAAGGCA CGCAAGAACC CGGT	CATGAG GGTGAAGCCG CAGTCCGTGA	AGACTTACCA	9840
GTCTACACTA AGCCACTAGA AACCA	AAGGT ACACAAGGAC CCGGACATGA	AGGTGAAGCT	9900
GCAGTTCGCG AGGAAGAACC AGCT	TACACA GAACCGTTAG CAACGAAAGG	CACGCAAGAG	9960
CCAGGTCATG AGGGCAAAGC TACAG	TCCGC GAAGAGACTC TAGAGTACAC	GGAACCGGTA	10020
GCGACAAAAG GCACACAAGA ACCCG	AACAT GAGGGCGAAG cGGCAGTAGA	AGAAGAACTT	10080
CCGGCTTTAG AGGTCACTAC ACGAA	TAGA ACGGAAATCC AGAATATTCC	TTATACAACA	10140
GAAGAAATTC AGGATCCAAC ACTT	CTGAAA AATCGTCGTA AGATTGAACG	ACAAGGGCAA	10200
GCAGGGACAC GTACAATTCA ATAT	GAAAG TACATCGTAA ATGGTAATGT	CGTAGAAACT	10260
AAAGAAGTGT CACGAACTGA AGTAG	CTCCG GTCAACGAAG TCGTTAAAGT	AGGAACACTT	10320
GTGAAAGTTA AACCTACAGT AGAA	ATTACA AACTTAACAA AAGTTGAGAA	CAAAAAATCT	10380
ATAACTGTAA GTTATAACTT AATAG	AACT ACCTCAGCAT ATGTTTCTGC	AAAAACGCAA	10440
GTTTTCCATG GAGACAAGCT AGTT	AAGAG GTGGATATAG AAAATCCTGC	CAAAGAGCAA	10500
GTAATATCAG GTTTAGATTA CTAC	ACACCG TATACAGTTA AAACACACCT	AACTTATAAT	10560
TTGGGTGAAA ATAATGAGGA AAATA	CTGAA ACATCAACTC AAGATTTCCA	ATTAGAGTAT	10620
AAGAAAATAG AGATTAAAGA TATT	GATTCA GTAGAATTAT ACGGTAAAGA	AAATGATCGT	10680
TATCGTAGAT ATTTAAGTCT AAGT	GAAAG CCGACTGATA CGGCTAAATA	CTTTGTAAAA	10740
GTGAAATCAG ATCGCTTCAA AGAA	ATGTAC CTACCTGTAA AATCTATTAC	AGAAAAATACG	10800

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GATGGAACGT ATAAAGTGAC GGTAGCCGTT GATCAACTTG TCGAAGAAGG TACAGACGGT	10860
TACAAAGATG ATTACACATT TACTGTAGCT AAATCTAAAG CAGAGCAACC AGGAGTTTAC	10920
ACATCCTTTA AACAGCTGGT AACAGCCATG CAAAGCAATC TGTCTGGTGT CTATACATTG	10980
GCTTCAGATA TGACCGCAGA TGAGGTGAGC TTAGGCGATA AGCAGACAAG TTATCTCACA	11040
GGTGCATTTA CAGGGAGCTT GATCGGTTCT GATGGAACAA AATCGTATGC CATTTATGAT	11100
TTGAAGAAAC CATTATTTGA TACATTAAAT GGTGCTACAG TTAGAGATTT GGATATTAAA	11160
ACTGTTTCTG CTGATAGTAA AGAAAATGTC GCAGCGCTGG CGAAGGCAGC GAATAGCGCG	11220
AATATTAATA ATGTTGCAGT AGAAGGAAAA ATCTCAGGTG CGAAATCTGT TGCGGGATTA	11280
GTAGCGAGCG CAACAAATAC AGTGATAGAA AACAGCTCGT TTACAGGGAA ACTTATCGCA	11340
AATCACCAGG ACAGTAATAA AAATGATACT GGAGGAATAG TAGGTAATAT AACAGGAAAT	11400
AGTTCGAGAG TTAATAAAGT TAGGGTAGAT GCCTTAATCT CTACTAATGC ACGCAATAAT	11460
AACCAAACAG CTGGAGGGAT AGTAGGTAGA TTAGAAAATG GTGCATTGAT ATCTAATTCTG	11520
GTTGCTACTG GAGAAATACG AAATGGTCAA GGATATTCTA GAGTCGGAGG AATAGTAGGA	11580
TCTACGTGGC AAAACGGTCG AGTAAATAAT GTTGTGAGTA ACGTAGATGT TGGAGATGGT	11640
TATGTTATCA CCGGTGATCA ATACGCAGCA GCAGATGTGA AAAATGCAAG TACATCAGTT	11700
GATAATAGAA AAGCAGACAG ATTCGCTACA AAATTATCAA AAGACCAAAT AGACGCGAAA	11760
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CTAAGAGAAG TTGATTATAC AAGACTAAAT AAAGCAGAAG CTGAAAGAAA AGTAGCTTAT	11880
AGCAACATAG AAAAAGTAT GCCATTCTAC AATAAAGACC TAGTAGTTCA CTATGGTAAC	11940
AAAGTAGCGA CAACAGATAA ACTTTACACT ACAGAATTGT TAGATGTTGT GCCGATGAAA	12000
GATGATGAAG TAGTAACGGA TATTAATAAT AAGAAAAATT CAATAAATAA AGTTATGTTA	12060
CATTTCAAAG ATAATACAGT AGAATACCTA GATGTAACAT TCAAAGAAAA CTTCATAAAC	12120
AGTCAAGTAA TCGAATACAA TGTTACAGGA AAAGAATATA TATTCACACC AGAAGCATTT	12180
GTTTCAGACT ATACAGCGAT AACGAATAAC GTACTAAGCG ACTTGCAAAA TGTAACACTT	12240
AACTCAGAAG CTAATAAAAA AGTACTAGGA GCAGCGAATG ATGCAGCCTT AGATAACCTA	12300
TACTTAGATA GACAATTTGA AGAAGTTAAA GCTAATATAG CAGAACACCT AAGAAAAGTA	12360
TTAGCGATGG ATAAATCAAT CAATACTACA GGAGACGGTG TAGTTGAATA CGTAAGTGAG	12420
AAAATCAAAA ATAACAAAGA AGCATTTATG CTAGGTCTTA CTTATATGAA CCGTTGGTAC	12480
GATATTAATT ATGGTAAAA GAATACAAAA GATTTATCTA CGTACAAGTT TGACTTTAAC	12540
GGAAATAATG AGACTTCAAC GTTGGAATACT ATTGTCGCAT TAGGAAATAG TGGACTAGAT	12600

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AACCTGAGAG CTTCAAATAC TGTAGGTTTA TATGCGAATA AACTTGCATC GGTAAGGA	12660
GAAGATTCAG TCTTTGACTT CGTAGAAGCG TATAGAAAAC TGTTCTTACC AAACAAAACA	12720
AATAACGAGT GGTTTAAAGA AAATACAAAG GCATATATAG TCGAAATGAA GTCTGATATT	12780
GCAGAAGTAC GAGAAAAACA AGAATCACCA ACAGCCGATA GAAAATATTC ATTAGGAGTT	12840
TACGATAGAA TATCAGCACC AAGTTGGGG CATAAGAGTA TGTTATTACC ACTACTAACT	12900
TTACCTGAAG AATCTGTGTA TATTTTCATCG AATATGTCTA CACTTGCATT CGGTTCTGAT	12960
GAAAGATATC GTGATAGTGT GGATGGAGTT ATTCTTTTCTG GAGATGCTTT ACGAACTTAT	13020
GTAAGAAATA GAGTTGATAT AGCAGCGAAA AGGCATAGAG ACCATTATGA TATTTGGTAC	13080
AATCTTCTTG ACAGTGCTTC AAAAGAAAAA CTTTTCCTG CTGTGATAGT TTATGATGGA	13140
TTCAATGTAA AAGATGAGAC AGGAAGAACT TATTTGGCAA GGTTAACGGA TAAAAACATC	13200
GGCTCTATTA AAGAATCTT CGGACCTGTT GGGAAATGGT ATGAGTATAA TAGTAGTGCA	13260
GGAGCGTATG CGyAtGGAAG TTTAACGCAC TTTGTGTTAG ATAGATTATT AGATGCTTAT	13320
GGAACGTCGG TTTATACTCA TGAAATGGTT CATAATTCTG ATTCTGCAAT CTACTTTGAA	13380
GGAAATGGTA GACGTGAAGG ATTGGGAGCG GAGTTATACG CACTTGGTTT ACTGCAATCT	13440
GTAGATAGTG TAAATTCTCA TATTTTAGCT TTAAATACGT TATATAAGC AGAAAAAGAT	13500
GATTTGAATA GATTGCATAC ATATAATCCG GTGGAACGTT TCGATTGCGA TGAGGCGCTT	13560
CAAAGTTATA TGCATGGATC ATATGATGTA ATGTATACAC TTGATGCGAT GGAAGCAAAA	13620
GCGATATTAG CTCAAATAA TGATGTTAAG AAAAAATGGT TTAGAAAAAT AGAAAAATTAT	13680
TACGTTTCGTG ATACTAGACA TAATAAAGAT ACACATGCAG GAAATAAAGT CCGTCCATTA	13740
ACAGATGAAG AAGTAGCTAA CTTAACATCG TTAAACTCAT TAATCGACAA CGACATCATA	13800
AATAGACGTA GCTATGATGA TAGTAGAGAA TATAAACGAA ATGGCTACTA TACTATAAGT	13860
ATGTTCTCTC CTGTATACGC AGCGCTAAGC AATTCGAAAG GTGCTCCTGG AGATATTATG	13920
TTTAGAAAAA TAGCTTATGA ATTACTTGCG GAAAAAGGTT ATCACAAAGG ATTCCTACCT	13980
TATGTTTCTA ATCAGTACGG AGCAGAAGCA TTTGCCAGCG GAAGCAAAAC ATTCTCATCA	14040
TGGCATGGAA GAGATGTTGC TTTAGTGACA GATGATTTAG TATTTAAGAA AGTATTCAAT	14100
GGTGAGTACT CATCATGGGC TGATTTCAAA AAAGCAATGT TTAAACAACG TATAGATAAA	14160
CAAGATAATC TGAAACCAAT AACAAATCAA TACGAATTAG GTAATCCTAA TAGTACAAAA	14220
GAAGTAACTA TAACAACGGC TGCACAAATG CAACAATTAA TTAATGAAGC GGCTGCGAAA	14280
GATATTACTA ATATAGATCG TGCAACGAGT CATACCCAG CAAGTTGGGT GCATTTATTA	14340

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AAACAAAAA TCTATAATGC ATATCTTCGC ACTACAGATG ACTTTAGAAA TTCTATATAT	14400
AAATAAGATT GTAGAGTTTC ATTGTTGAGT AGTGTTCCTT GTAAGGATGA GGAGTCAGAT	14460
GACAAATCGA CTCCTTTTTC TTATGGATCG ATGTAGAGAT TTGATTGAAT GCAGATTGCA	14520
GGAATCATCT TCAACTCATC AACGACCAAT GGTGACAAGG TGGATTTCOA TCCCACAGAA	14580
AATGTTGATT TGAGAAATAA CTTTGCTAGT CTACTAAAAT AAATACAAAA CAATCCTAGA	14640
AGATTTTTC TGGGATTGTT TTTTGCTGAG TGGGATGCTT CAAGTTGTCT GCCTTGACTT	14700
TCTTGAGGGA AGTTATATAA TAGTTGTAAT AATTAG	14736

(2) INFORMATION FOR SEQ ID NO: 172:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 11770 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 172:

ACAGGAAAGC ACGATAGCAA TCTCTTTGGA AGATTAAAA AATATTCCTC AAAGTTTCGC	60
TGTTGCTTAC GGTGATACGA AAGTATCTTC GATTCTCTCT GTCTTGCGTG CTAATTTAGT	120
AAATCATTTG ATTACAGACA AAAATACAAT TTAAAAAGTT TTGGAAGAAG ATGGGGATTT	180
GACTTTTGA GAGATTCTAG GTGAGTGAAA ATGATAGACT GATTCAGTTT ATCGTPTTTC	240
TTTTTAGTTG ATTGCACATT TGTGCTTATA TAAACAAAA TAGTTTATCT GTTGTTTTTG	300
GATTGACAAC TTTATTATGT AGTTGTATTC TATAGTTACA AAAGAAAATT TTAAAAATTC	360
AAATGAAAA AGCTTTTTAC ATAGTGAAAT GAGGAGGAAT TTATGGAAAT GATTGTTCCA	420
GATCAAATTA TCATGGGTTT AATTTTATAT GCTGGTGATG CGAAACAACA TATTTATAAA	480
GCGTTAGATT ACATAAAAAA TGGTACATGT GAACGGTGTG AAGAAGAAAT ACAGTTAGCT	540
GATGCAGCCT TATTAGAAGC TCATAATCTA CAAACAAAAT TTTTGGCACA GGAAGCGTCT	600
GGTACAAAGA CAGAAATTAC AGCTCTCTTT GTTCATTAC AAGATCATCT CATGACCACT	660
ATGACGGAGA TTAATTTAAT CAAAGAAATT ATTAGTTTGA GAAAAGAACT TCATAAAAAA	720
TAATACTAGA GTATTATCAT TGTATTAAAC ATAGAGGAGG AAAACATAAT GGTGAAGATT	780
GGTTTGTTTT GTGCAGCAGG TTTTCTACT GGTATGCTTG TAAATAATAT GAAAATTGCA	840
GCGCAATCTA GTGGAGTTGA GGCAGAAATA GAGGCGTTTT CTCAGTCTAA ATTAGCGGAT	900
TATGCGCCAA ATATAGATGT TGCACTATTG GGTCCACAAG TTGCTTATAC ATTAGATAAA	960
TCAAAAGAAA TTTGTGATAA GTGTGATGTT CCGATAGCTG TTATTCGGAT GATGGACTAT	1020

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GGTATGTTAG ATGGGAAAAA AGTATTAGAT TTGGCCCTAT CTTTGATTAG TGGGTAAGAA	1080
AAGGAGATTT ATTATGTCAA AGATGGATGT TCAGAAAATC ATTGCACCGA TGATGAAGTT	1140
TGTGAATATG CGTGGCATTG TAGCTCTAAA AGATGGGATG TTAGCAATTT TGCCATTGAC	1200
AGTAGTTGGT AGTTTGTCT TGATTATGGG ACAATTGCCG TTCGAAGGAT TAAATAAGAG	1260
CATTGCTAGT GTTTTGGAG CTAATGGAC AGAGCCGTTT ATGCAAGTAT ATTCAGGAAC	1320
TTTGTCTATT ATGGGTCTAA TTTCTTGTTT TTCAATTGCC TATTCTTATG CTAAGAATAG	1380
CGGAGTAGAG GCTTTACCAG CTGGAGTTCT ATCTGTATCT GCATTCTTTA TTTTGTCTAAG	1440
ATCATCTTAT ATCCCTAAAC AAGGTGAGGC GATTGGGGAC GCTATTAGTA AAGTTTGGTT	1500
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CTTCTTTATA AAGAGAAAAA TTGTTATTAA GATGCCAGAA CAAGTTCAC AAGCTATTGC	1620
CAAACAGTTT GAAGCAATGA TTCCAGCATT TGTAATTTTC TTATCTTCTA TGATTGTATA	1680
TATTTTAGCG AAGTCATTGA CTAATGGCGG AACATTCTA GAAATGATTT ATTCTGCTAT	1740
TCAAGTCCG TTGCAAGGTT TAACTGGATC TTTGTATGGT GCTATTGGAA TTGCATTCTT	1800
TATATCATTT TTGTGGTGGT TTGGTGTTCA TGGGCAATCG GTAGTAAATG GAGTAGTGAC	1860
AGCTCTGCTT TTATCTAATC TTGATGCTAA TAAAGCTATG TTAGCCTCTG CTAATCTATC	1920
ATTAGAAAAT GGTGCACATA TTGTTACTCA ACAATTTTTC GATTCATTTT TAATCTATC	1980
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TGTATTTGGA TTTCCGATTG TCATGAATCC AGTTATGTTT GTACCTTTCA TTCTTGTTCC	2160
TGTACTTGCA GCTGTGATAG TATATGGAGC TATTGCAACA GGTTCATGC AGCCATTCTC	2220
AGGGGTAACA TTGCCTTGGA GTACACCAGC TATTTTATCA GGATTTTGGG TGGGTGGATG	2280
GCAAGGAGTT ATTACTCAGC TGGTGATATT AGCGATGTCT ACATTGGTTT ATTTTCCATT	2340
CTTTAAAGTA CAGGATCGTT TAGCTTACCA AAATGAAATC AAACAATCTT AGAGGTATTT	2400
GTGTGTTACT GTTAAACTCA CACATTTGTG CTAAAAATTA GAGAGTTAAA ATTTTCTAG	2460
TTAAAAGCTT GAAAATTTCT ATAAAAATCG GTATTATATT TTCGAAAGAA ATAAAAATAT	2520
TTTCGAAAGA AAGGTGCTTA CGATGGTAAA TACAGAAGTA GCAAGAACAA CAATCAAGAC	2580
AGAATATTTT GGCAGCCTTA CTGAAAGGAT GAACAAATAT CGAGAAGATG TTTTAAATAA	2640
AAAACCTTAT ATTGATGCTG AGAGAGCAGT TCTAGCAACA CGCGCCTATG AACGATACAA	2700
GGAACAACCT AATGTCCTAA AACGTGCATA TATGCTGAAA GAAATTTTGG AAAATATGAC	2760

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TATCTATATT GAAGAAGAAT CTATGATTGC GGGAAATCAA GCTTCTTCCA ATAAAGATGC	2820
TCCTATTTT CCGGAATATA CGCTAGAATT TGTTCTCAAT GAGTTGGATC TTTTGGAAAA	2880
GCGTGATGGA GATGTTTCT ATATTACAGA AGAAACAAAA GAACAACTTA GAAGTATTGC	2940
TCCGTTTTGG GAAAATAATA ATTTACGTGC TAGAGCTGGT GCCTTATTAC CTGAAGAAGT	3000
GTCTGTTTAT ATGGAACAG GATTCTTCGG TATGGAAGGT AAGATGAATT CTGGAGATGC	3060
TCACCTAGCA GTTAACTATC AGAACTTTT GCAATTGGT TTAAGAGGTT TTGAAGAGCG	3120
GGCTCGTAAA GCAAAAGTAG CTCTAGATTT AACAGATCCA GCAAGTATTG ATAAATATCA	3180
TTTTTACCAC TCTATATTTA TCGTAATCGA TGCTATTAAA GTATATGCAA AGCGCTTTGT	3240
TGCTCTTGCT AAAAGTTAG CCGAAAATGC AAATCCTAAA CGTAAGAAAG AATTACTTGA	3300
GATTGCAGAT ATTTGCTCTA GAGTCCCATA TGAACCGGCA ACTACTTTTG CAGAAGCTAT	3360
TCAATCAGTT TGGTTTATTC AATGTATTTT ACAAATTGAA TCTAATGGCC ACTCTCTTTC	3420
ATATGGCCGT TTTGATCAAT ATATGTATCC ATATATGAAG GCTGATTTAG AAAGTGGTAA	3480
AGAAACAGAA GATAGCATTG TTGAACGTCT GACAAATCTT TGGATTAAGA CAATTACAAT	3540
TAATAAGGTT CGCAGTCAAT CACATACATT TTCTTCAGCA GGAAGTCCTT TATATCAAAA	3600
TGTTACAATT GGTGGACAGA CTCGAGATAA GAAGGATGCT GTTAACCCAT TATCTTATTT	3660
GGTATTAAAA TCAGTTGCAC AAACCCATCT ACCGCAACCT AATCTAACTG TACGTTACCA	3720
TGCAGGTTTA GATGCTCGTT TCATGAATGA GTGTATTGAA GTGATGAAAC TTGGTTTTGG	3780
TATGCCTGCA TTTAATAATG ATGAGATTAT TATTCCTTCT TTTATTGCAA AAGGAGTATT	3840
GGAAGATGAT GCTTATGATT ACAGTGCCAT TGGATGTGTT GAAACGGCAG TTCCAGGGAA	3900
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TAAGGATATG AAGAATTTT CTGAATTAGA AAATGCTTGG GATAAAACAC TAAGATATTT	4080
GACACGAATG AGTGTTATTG TTGAAAATTC TATTGATTTA TCATTGGAAC GAGAAGTTCC	4140
TGATATTCTA TGTTACAGCAT TGAATGATGA TTGTATTGGT CGTGGAAAAC ACCTTAAAGA	4200
AGGTGGAGCA GTATATGATT ATATATCAGG ATTGCAAGTT GGAATTGCAA ATTTGTCGGA	4260
TTCAATTAGCT GCAATTAAAA AATTGGTGTT TGAGGAAGAA CGTATAAGCC CAAGTCAGCT	4320
TTGGCATGCA CTGGAAACAG ATTATGCCGG AGAAGAAGGT AAGGTCATTC AAGAAATGTT	4380
GATTCATGAT GCACCTAAGT ATGGTAATGA TGATGATTAT GCTGACAAAT TGGTTACTGC	4440
TGCTTATGAC ATTTATGTTG ATGAAATTGC TAAATATCCT AATACACGTT ATGGAAGAGG	4500
GCCTATTGGA GGAATTCGTT ATTCAGGAAC ATCTTCTATC TCAGCCAACG TAGGGCAGGG	4560

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ACGTGGAACA TTAGCAACTC CAGATGGACG CAACGCGGGT ACACCGTTAG CAGAGGGTTG	4620
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ATTACCAACA GATGAAATCG TAGGTGGGGT TCTCTTAAAT CAGAAAGTAA ATCCTCAAAC	4740
GTTAGCCAAA GAAGAAGATA AATTAAAAC TATTGCTTTG TTACGAACAT TCTTTAATCG	4800
TTTACATGGG TACCATATTC AATACAATGT TGTTCACAGA GAGACGCTGA TTGACGCTCA	4860
GAAACATCCT GAAAAACACA GAGACTTAAT TGTTCGTGTT GCAGGATACT CTGCATTCTT	4920
CAATGTTCTT TCTAAGGCAA CCCAAGATGA CATTATAGGA CGTACTGAGC ATACTTTGTA	4980
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AGAGGGTTCT ATTAATTTTT TTGAACGAAT CAAAGATGTA AGAGAATTGA TTGGCTCTAC	5160
ACCCCTCTATT CATGTTTCAGG TGATTTCTCA AGATTTTGAA GGCATCTTAA AGGATGCTCA	5220
TAAAATTCGA AGACAAGCAG GAGATGATAT ATTTATCAAA GTACCTGTTA CTCCAGCTGG	5280
ATTACGTGCA ATAAAGGCGC TAAAAAAGA GGGCTACCAT ATCACTGCAA CAGCTATTTA	5340
TACAGTTATT CAGGGATTAT TAGCTATCGA AGCAGGAGCG GATTACCTAG CTCCATATTA	5400
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AGTAAATAAT GCTTTAGCTG CAGGTGCCA TGCTGTTACA GCAGGAGCGG ATGTTTTTGA	5580
ATCAGCTTTC GCCATGCCAT CTATCCAAAA GCGGTTGAT GATTTTCTG ACGATTGGTT	5640
TGTTATTCAA AATAGTCGTT CCATTTAGAT AGAGAGGAAA TACATATGAG AATTTTGTCT	5700
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GATTTGGGAA ATTGCCCTAT TCTATTATGC GATCAGTTGG TTTATGATAT TGTGGAAAA	5820
CGATTGAAG ATTACCTACA TAGGTATGGT TTCCATATTG TTCTGGCGCT ATTTAATGGT	5880
GAAGCTTCTG ACAATGAAAT CAATCGAGTT GTTGCCTTGG CTGAGAAAGA AAATTGTGAT	5940
AGTATTATCG GTCTTGGTGG GGGAAAGACG ATTGATAGCG CAAAAGCTAT TGCAGATTG	6000
ATTGAAAAGC CTGTTATTAT TGCTCCAACA ATTGCATCGA CCGACGCACC TGTATCTGCT	6060
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CCAGATTTAG TTTTGGTTGA TACAAAAGTT ATTTACAAG CCCCTAAGCG TTTATTAGCG	6180
TCTGGTATTG CAGATGGTTT AGCAACTTGG GTTGAGGCGC GTGCGGTTAT GCAGGCAAAT	6240
GGAAAACTA TGTTGGGACA ACAGCAAACA TTGGCTGGAG TTGCAATTGC GAAGAAATGT	6300

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GAAGAAACGC TGTTCGAGA TGGTTTACAG GCTATGGCAG CTTGTGAAGC TAAAGTGGTG	6360
ACACCAGCAT TAGAAAATAT TGTTGAAGCT AATACTTTAT TGAGTGGTCT AGGTTTTGAA	6420
AGTGGAGGAT TAGCTGCGGC GCATGCAATT CATAATGGTT TTAGTGCAAT GACAGGTGAC	6480
ATTCATCATT TAACACATGG TGAAAAAGTA GCTTATGGAA CTTTAGTACA ACTATTATTG	6540
GAAATAGAC CTAAAGAAGA ACTTGATAAG TATATTGAGT TTTACAAAAA AATTGGTATG	6600
CCAACAATC TAAAAGAAAT GCATTGGAT CAAGTTGGAT ATGATGATTT AATAAAAGTT	6660
GGTAAACAAG CAACTATGGA GGGTGAGACA ATTCATCAGA TGCCGTTTAA GATTCGCCT	6720
TCAGATGTTG CTCAAGCTAT TATCGCTGTA GATGCCTATG TAAATTCAAA ATAAACAATA	6780
AGGACTACTG TTTTCCAAAT GGTAGTCTTT TATTGATCCC TGTATTGAAT TCTATAGAAG	6840
ATTGAAATAG GATGAGAACA AATCGATTGG GAAAGTAAAA TTAATTTCTA TAAATGTTTT	6900
AGCAATGTT TCGTACTATT TCAGATTCAG TCTACTATAT GTTCTTCATA AATCAAAAAG	6960
CGACATAGGT TGTCGGCTAT TTATTGTGAA TACATTAATT AGCATTCCAG TTTTATCTTC	7020
GGTCTAAAAT AAGTATTTTG TGCTATACGA GATAAGCTTC TTGACTTACT CCTTGATTTA	7080
CTGCATAACA ATGGGATAAA AAGTGGGAGA TAGAGCAATT CATAGTCATC AAAATTAATG	7140
AGATACAGTA TACAGTTTTT CCTTTAAACA CATTTCAAAT TCCCTCAAAA ATGGTATAAT	7200
AGTAACATCA CAAAATTGGA GAGAGACCAT GAGTTTTTAC AATCATAAAG AAATTGAGCC	7260
TAAGTGGCAG GGCTACTGGG CAGAACATCA TACATTTAAG ACAGGAACAG ATACATCAAA	7320
ACCTAAGTTT TATGCGCTTG ATATGTTCCC TTATCCGTCT GGAGCTGGTC TGCACGTAGG	7380
ACACCCAGAA GGTTATACTG CAACCGATAT CCTCAGTCGT TACAAACGTG CGCAAGGCTA	7440
CAATGTCCTT CACCCAATGG GTTGGGATGC TTTTGGTTTG CCTGCAGAGC AATACGCTAT	7500
GGATACTGGT AATGACCCAG CAGAATTTAC AGCGGAAAAC ATTGCCAACT TCAAACGTCA	7560
AATTAATGCG CTTGGATTTT CTTATGACTG GGATCGTGAA GTCAACACAA CAGATCCAAA	7620
CTACTACAAG TGGACTCAAT GGATTTTTCAC CAAGCTTTAC GAAAAGGCT TGGCCTATCA	7680
AGCTGAAGTG CCAGTAACT GGGTTGAGGA ATTGGGAACT GCCATTGCCA ATGAAGAAGT	7740
GCTTCCTGAC GGAACCTCTG AGCGTGGAGG CTATCCAGTT GTCCGCAAAC CAATGCGCCA	7800
ATGGATGCTC AAAATCACGG CTTACGCAGA GCGCTTGCTC AATGACTTAG ATGAACTAGA	7860
TTGGTCAGAG TCTATCAAGG ATATGCAACG CAACTGGATT GGTAAATCAA CTGGTGCCAA	7920
TGTAACTTTC AAAGTAAAAG GAACAGACAA GGAATTTACA GTCTTTACTA CTCGTCCGGA	7980
CACACTTTTC GGTGCGACTT TCACTGTCTT GGCTCCTGAA CATGAATTAG TAGACGCTAT	8040
CACAAGTTCA GAGCAAGCAG AAGCTGTAGC AGACTATAAA CACCAAGCCA GCCTTAAGTC	8100

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TGACTTGGCT CGTACAGACC TTGCTAAAGA AAAACAGGG GTTTGGACTG GTGCTTATGC	8160
CATCAACCCT GTCAATGGTA AGGAAATGCC AATCTGGATT GCAGACTATG TCCTTGCTAG	8220
TTATGGAACA GGTGCGGTTA TGGCTGTGCC TGCCACGAC CAACGTGACT GGGAATTGTC	8280
CAAACAATTT GACCTTCCAA TCGTCGAAGT ACTTGAAGGT GGAAATGTCG AAGAAGCTGC	8340
CTACACAGAG GATGGCCTGC ATGTCAATTC AGACTTCCTA GATGGATTGA ACAAAGAAGA	8400
CGCTATTGCC AAGATTGTGG CTTGGTTGGA AGAAAAAGGC TGTGGTCAGG AGAAGGTTAC	8460
CTACCGTCTC CGCGACTGGC TCTTTAGCCG TCAACGTTAC TGGGGTGAGC CAATTCCAAT	8520
CATTCAATTGG GAAGATGGAA CTTCAACAGC TGTTCCTGAA ACTGAATTGC CGCTTGTCTT	8580
GCCTGTAACC AAGGATATCC GTCCTTCAGG TACTGGTGAA AGTCCACTAG CTAACCTGAC	8640
AGATTGGCTT GAAGTGACTC GTGAAGATGG TGTCAAAGGT CGTCGTGAAA CCAACACTAT	8700
GCCACAATGG GCTGGTTCAA GCTGGTACTA CCTCCGCTAT ATTGACCCGC ACAATACTGA	8760
GAAATTGGCT GATGAGGACC TCCTCAAACA ATGGTTGCCA GTAGATATCT ACGTGGGTGG	8820
TGCGGAACAT GCTGTACTTC ACTTGCTTTA TGCTCGTTTC TGGCATAAAT TCCTCTATGA	8880
CCTCGGTGTT GTTCCGACTA AGGAACCATT CCAAAAATC TTTAACCAAG GGATGATTTT	8940
GGGAACAAGC TACCGTGACC ACCGTGGTGC TCTTGTGGCA ACCGACAAGG TTGAAAAACG	9000
TGATGGTTCC TTCTTCCATG TAGAAACAGG GGAAGAGTTG GAGCAAGCGC CAGCCAAGAT	9060
GTCTAAATCG CTCAAGAACG TTGTTAACCC AGACGATGTG GTGGAACAAT ACGGTGCCGA	9120
TACCCCTTCGT GTTTATGAAA TGTTTATGGG ACCACTCGAT GCTTCGATTG CTTGGTCAGA	9180
AGAAGGTTTG GAAGGAAGCC GTAAGTTCCT TGACCGAGTT TACCGTTTGA TTACAAGTAA	9240
AGAAATCCTT GCGGAAAACA ATGGTGCTCT TGACAAGGTT TACAACGAAA CAGTCAAAGC	9300
TGTTACTGAG CAAATTGAGT CTCTCAAAT CAACACAGCT ATTGCCCAAC TTATGGTCTT	9360
TGTCAATGCT GCTAACAAGG AAGATAAGCT TTATGTTGAC TATGCCAAAG GCTTTATTCA	9420
ATTGATTGCA CCATTGTCAC CTCCTTGGC AGAAGAACTC TGGCAAACAG TCGCAGAAAC	9480
AGGTGAGTCA ATCTCTTATG TAGCTTGGCC AACTTGGGAC GAAAGCAAAT TGGTTGAAGA	9540
TGAAATTGAA ATTGTCGTCC AAATCAAAGG AAAAGTTCGT GCCAACTCA TGGTTGCTAA	9600
AGATCTATCA CGTGAAGAAT TACAAGAAAT CGCTTTAGCT GATGAAAAAG TCAAAGCAGA	9660
AATTGACGGT AAGGAAATCG TGAAAGTAAT TGCGGTACCG AATAAACTCG TTAATATCGT	9720
CGTTAAATAA CGAGTTTATT AGCTCTATCT GCCACCTTCA ATAGTCCACT GGACTATTGA	9780
AsCCAATAA ATTAGTTAAC ATTGTTGTGA AATAAGATAG GAGTCCTTCA GAGTAGAATC	9840

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TGGAGGATTT TTTGAATCTT CTTATGAAAG TATGATATAC TATGGGCAAC TATAAAGTTT	9900
GAAAAGTGAA ATAAGGAGAA TAAGATGCCA GTAAATGAAT ATGGTCAAAT GATTGGGGAG	9960
TCAATGGAAG CTTATACTCC AGGTGAATTG CCTTCTTTTG ATTTCTTAGA AGGCGTTAT	10020
GCTAGGATAG AGGCTCTTTC ACTGGAAAAG CATGCGGAGG ATTTATTAGC TGTTTATGGC	10080
CCTGATACGC CTCGGGAGAT GTGGACCTAC CTCTTTCAGG AGTCAGTAGC AGACATGGAG	10140
GAACTGGTCA GCCTTTTAAA TCAGATGTTG GCTCGTAAGG ACCGTTTTTA TTATGCAATC	10200
ATAGACAAGG CAACTGGTAA GGCTTTGGGA ACTTTTTCCC TCATGCGAAT TGATCAGAAT	10260
AACCGAGTAA TAGAAGTGGG AGCTGTCACT TTTTCTCCAG AGCTCAGGGG GACACGGATA	10320
GGAACAGAAG CCCAGTATCT CTTGGCTTGC TATGTCTTTG AGGAGCTTAA CTATCGTCGC	10380
TATGAGTGA AATGCGATGC TCTTAACCTG CCATCCAGAC GAGCAGCGGA ACGTTTGGGA	10440
TTTATTTATG AAGGAACCTT CCGTCAGGCA GTGGTTTATA AGGGGCGTAC AAGAGATACG	10500
GATTGGTTGT CTATGATTGA TAAGGACTGG CCTCAAGTCA AAGCTCGATT GGAAATATGG	10560
TTGCGTCTG AAAACTTTGA TAAAAATGGA CGACAGCACA AGAGCTTGAG AGAACTTTAA	10620
GAGGTGTGA GATGATTACT ATTA AAAAGC AAGAAATTGT CAAGCTAGAG GATGTTTGC	10680
ATCTCTATCA GGCTGTCGGT TGGACAAACT ATACCCATCA AACAGAGATG CTGGAGCAGG	10740
CCTTATCTCA TTCATTAGTA ATTTATCTGG CACTTGATGG TGATGCTGTG GTGGGCTTGA	10800
TTCGTTTGGT TGGAGATGGT TTTTCATCAG TTTTGTACA GGATTTGATT GTTTGCCTA	10860
GCTATCAGCG TCAAGGATT GGTAGCTCCT TGATGAAAGA GGCTTTAGGA AATTTTAAAG	10920
AGGCCTATCA AGTCCAGCTG GCGACAGAAG AGACAGAAAA AACGTGGGA TTTTATCGTT	10980
CTATGGGCTT TGAAATCTTA TCCACCTATG ACTGTACAGG AATGATTTGG ATAAACAGAG	11040
AAAAATAAAA AAAC TTGTTT GTTCTTAAGC AAAGTTTAAG GATGGTCTAG TATCATATAG	11100
TCATTAAATA AAGACCTCCT AACTTTATTT AATAAAATCC TAAACTTTTT TCATCACAAT	11160
CTCCTAATGA AGCCACCCAA TCAGGTGGCT TTTTGC GG T ACGACGGGCA TGTCGTATAT	11220
CTGAGGTGTA AGTCCTCAGC CTGACTATCG TGAGGTAGCA GGGAGAGGAA GGGATAGCGA	11280
AATCGTGGCT CTACGAACAG GAACGTGATA GTAAGGCGTA TATAGCGGAT AAGGAGGCTT	11340
CAAACCTAA AGTCCAAAAA GGTAGTCGTA ACCTATATGT GTAAATCACG AGAGTAATTG	11400
AATTCGGACT AAGGTTGTG TGAAAAAGAT AAATCTTTCT AGAGTCTAAA GACTCTGCGT	11460
CAGATTTCCCT ATTTTCACTG TAACCTTTTA ACGTCCTCAT ATCTTGTATA AACGAGGAAA	11520
GATGTACGAC TTATCCCGTG AGGTTTCATG AGCGCTGAAA GCGTAGTAAC AACGAATCAT	11580
GAGAAGTCAG CCGAGCCCAT AGTAGTGAGG AAAC TTCCGT AATGGAAGTG GAGCGAAGGG	11640

1101

GTGAATACTC AAACAGTCTG GGGAGAGACT GTTTGAGGTC TGTCGCTAGA AAGAGAAAAC 11700
 GACAGATCGA AGTAATCCTA CTTCACCTGT GTCTGTAAAA TGAGTGGTCT GATAGAAGCTG 11760
 GACTTTGAGG 11770

(2) INFORMATION FOR SEQ ID NO: 173:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 4185 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 173:

CGCGAAACTA CTTTCTTAGT ATAACACTTT CAGAATCATT GTCAATAGAA ATGACTTGAT 60
 TTTTCAATT TTTTCAAGCT ATTTCCAAGG GTTGTAATAAT CGTCCCTGAT TCTGCAAGAT 120
 AAGTAGTAAA CTAACACTA AAAACAAGGT TGCCAAGAGC AAGGTAATAT AGTCTCCTTT 180
 TTTCAAGGCC TGATAACTAT ACCATGTGCG TTTTCTCTCT TTCCCAAAGC GGCGAACTCC 240
 ATGGCAGTCG CAATGGTATC AATGCGTTCT AGCGAGCTAA AAATCAAGGG CGTAATAATG 300
 AGCAGATTGC CTTTGATTCT TTGCATAAGA GAAGCTTCT TGGATAATTC CATCCCACGC 360
 GCCTCCTGAG ACATCTTGAT AGTAAAGAAT TCTTCTTGCA AATCTGGAAT ATAGCGCAAG 420
 GTCAGGCTGA CAGAATAAGC AATCTTATAG GGCACACCAA TTTGATTAA ACTGGAAGCA 480
 AACTGACTAG GATGGGTGT CATCAAAAAG ATAATAGCCA GAGGAATGGT GCAAAGATAC 540
 TTAATGGCCA AATTTAGCAG ATAAAAGAGC TCCTGGCTGG TTAGAGTGTA GACACCGATT 600
 CCCTGCCAAA TCACACTTCT CTCTCCATAA AGTCCAACCC CATACTCGGG AGAAAAGAGA 660
 TAGACCATCA AAACGTTTAA AACGGCAAAT ATCGTCGCAA AAACGGCTAC AAAGGAAACA 720
 TCTTTAAAGC GAATTTCTGA TAAATAGAGG AGAAAGACTG AAAAGATGGC AATCAGCAAG 780
 AGCATTCTGG TATCATAGCT AATCATGGCC GCCAATGATA CCAGAATGAA AAAGAGAAGT 840
 TTCCCAGCTC CTGACAAGCG ATGAATCACA GTATCTCTAT GCTGGTAACC GATTAATTTA 900
 GCTTGCATCC CTCTCTCCTT TCTTTGTAAA ATGCCGTAA ATCCAGTGGA TCCACATCTA 960
 GTTCTTAGC CAAGTTAAAG ATGGAGGTTT CTTTGTAGAT GGCTTTTACT AACAGCTCAG 1020
 GATCGCTCAA CAGACTGGCT GGAACAGTAT CGGCAATCAA TTCTCCATCC ACCATGACAA 1080
 GGACCCGGTC TGAATAATCC AGCATCAATT GCATATCATG GGTAAATCATG ACAATGGTAT 1140
 GCCCTTTTGT ATGTAACCTC TCGAGAAATT CCATAATCTC AGTATAGTTC TTCTGATCTT 1200

1102

GACCTGCAGT CGGTTTCATCT AGGAGAATAA TTTCAGCTCC TAAGACCAAA ATTGAAGCAA	1260
TGGTGACACG TTTTTCCTGA CCAAATGACA GGGCAGAAAT AGGCCAATTA CGGAATTCAT	1320
AAAGTCCACA GATTTCGAAG GTTTCATATA CTCTCGTTTC AATTTCCTTC TCATCCACAC	1380
CTCGCAAACG GAGCCCTAGA GCCACCTCAT CAAAAATCAT ATTGGTTGAA ATCATTTGAT	1440
TAGGATTTTG TAGCACATAT CCTACTCGTT CCGCCCGCTC TGCAACAGAA TCGCCTTTTA	1500
TATCCTGTTT TTCCCAAAGA TAGCGTCCTT CCGTCTGAAT AAAGCTACTT ATAGCCTTGG	1560
CTAGAGTTGA TTTCCCTGCT CCATTTTTTC CGACAATAGC AATCTTTTCA CCCTTTTAA	1620
TATCTAAATG TAGGGATTTT AAAATCGGTC TATCATCATA AGAAAAAGAT ACTTCCTCTA	1680
GTCTAAAGAG TGAAGCAAT GCTGGGGTTT CTTTGGCCAG TTCATTCTGC AACTGAACCT	1740
GACCTTTTGA GATAGACAAG TTATCCAGAT TCGCTAATTG TTCTTCCTTG ACTAAGTCCA	1800
CACCTAATTG ACGGAGAGTC GTTAGATAAA GGGGTTCTCG AATTCCATTT TGAGTCAATA	1860
AATCAGTCGC AAGCAACTGG TCAGGGCTCC CATTAATAAG GATACGACCA TCGTTTATCA	1920
AGACAATCCG ATCCACAGGG CGATGCAGAA CGTCTCCAA ACGGTGCTCG ATAATAAGAG	1980
TCGTCTGCC CTCTTCCTTA TGAATCTGGT CAATCAATTC GATAATATCC TGACCTGACT	2040
TGGGATCTAG ATTGGCGAGT GGCTCATCAA ACAAGAGAAT CGGACTTTCA TCAATCAAGA	2100
CACCAGCCAG ACTGACTCGC TGCTTTTGTC CACCTGACAA ATCCTGAGGA CGCTGATCCA	2160
GTAAAGGAAG AAGGTCCAGC TTTTCAGCCC ATTTATAAAC ACGACCTTC ATCTCATCTA	2220
GGGCTGTAC ATCATTTCAG AGAGCAAACG CCAAATCTTC TGCCACAGAC AAGCCAATAA	2280
ACTGCCCATC TGTATCTGC AAAACTGTGC TAACCAGATG AGACTTATCA TAGATGCTCA	2340
TATCAAAGGC TACTTGACCC TTTATCAAAA ATTCTCCATA TGTCTGACCC TTGTAAATAT	2400
TGGGAATAAT CCCATTCAA CACTGACCCA AGGTAGATTT ACCTGACCCA GATGGTCCAA	2460
CAATTAAGAC TTTCTCTCCC TTGTAAATGG TCAAGTCTAT CCCTTGCAAG GTCGGTTCTT	2520
GTTGTGTTTC ATACCGGAAA GAGAAATCCT TCCACTCAAT TaTAGCTTCT TTCATCTTAC	2580
TCTCTTCATT CGCTTCTTAG ACTTCTATTT TATCATAAAT CAAGCCCTTC TTGCAGTCTC	2640
TCCTCTTAAA ATCTTAGCGC CAAAAGATT CCTATCCTAG CTTACTTGCC TAACTAATCT	2700
ATAAACATCG AAAAAGACTA GTTGCCAGC CTCCCATC ATTTTATACT CTTGAAAAT	2760
CTCTTCAAAC CACGTGAGcT TCGCCTTGCC GTAGGTATGG TTAGTGACTt CGTCAGTTTC	2820
ATCTACAACC TCAAAACCAT GTTTTGAGCc TGCTTCGTCA GTTCTATCCA CAATCTCAA	2880
ACACTGTTTT GAGCAACTGC GGCTAGCTTC CTAGTTTGCT CTTTGATTTT CATTGAGTAT	2940
TAGTCCTTTT TCAAACCTCC TGCACGAGTT TGGGTTCTCTG CATAGGCAAG TAAGAGAAGA	3000

1103

GTTCTGCAA TAGCTACAGA TACACCATG GCAATCCCCG CAACAATCCC TTGTGCAAAT	3060
ACTTTTCTG CCGCTTCTTG ATAAATCACA ACATCTCCAA GTGGTGCCAA GACACCCCAA	3120
ACAAGGGCAT TTGCAAGTAG TTGAATGAGA TTAAAAATAA GAATATCTTT CCAGTCAAAA	3180
ACACCATTGA TCACGCGAAC GTACTTTCTA AAAAGTCCCA CAACTAAACC AAAGAGTCCG	3240
CTAGCGATAA TCCAAGTCCA CCATAGACCA TAACCAACAA GAGAGTCCTT GATTGCATGA	3300
CCAATCAACC CGACAAGCAA ACCGATAATC GGTCCAAAAA TAATAGAAAG TAGCGCTTGT	3360
ACCGCATACT GAAGCTGGAT GCTTGTATTT GGAACAGGGG TTGGAATGTT GATCATCCCC	3420
ATGACGACAA AGAGGGCAGC GCCAATCCG ACAGCAACAA CTTGTTAAT TGTAATTTG	3480
ATTTCCATAC TATTCTCCTA TTTTATCCTT CTATTTCTT TATTTCATG GTCCAAGATG	3540
AACCGACACC TACATTATAG GCCTTGGCAA AGGAACCTTG GTTGATAGCC AAACCTAAAC	3600
GATAGAGAGA GTTGATGTAA AGGATGGGT GCCCAATTCT CACATCTGCA AATGATTTGC	3660
CATAGACAAC CTGATTTTGA TAGACCAGCA TATCAGCATG ATAGATGGTC ACTTCAAAAC	3720
GATCACCAAA TTCTGGTTC AGCTTGTAAT ATTCTTCCCG TGTGATAGAG GTCCAAAGCG	3780
AACCGAAACG CACATCCAGA ATATCAATGG CTCCCTTCAC CAGATGATCT TCTATGATGG	3840
TCGCTACGAC TGGAAGCTCT ACAATCTGTT CCACACTGAG CTCTGGCCCT ACTTCCTCAA	3900
AAGTAATGTG ACCACTGGCC AGTTTAGCAC CAGTATAGGC ATAGACATCA CGACCGTGGA	3960
AGGTATAAGA ATGCTCTGTG TTTTGACGCC TATTGGCCAC CTCAGAAATC TCACGAATGG	4020
CTACAATGCC AACGTGTTT TTGATAAAGG AAAGCGTCCC ATTATCTGGC GTGACAATGT	4080
ATTGATTTTT TGCACTCTTG GCAACTACAC TCTTACGTTT CGAACCAGACA CCTGGATCGA	4140
CAACCGATAC AACGTCGTT CCCTCAGGCC AGTAATCCAC CGTCT	4185

(2) INFORMATION FOR SEQ ID NO: 174:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2069 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 174:

TGATAGAGTT AAAGCCGCTG AGTCATTCAA TCCATCTCCA ACCATCAAAA TAGTGTGACC	60
TGCTTTCTGC AGTTTCTCTA CTAACCTAAA TTTCCCATCA GGTTCAGT CTGTATAGAC	120
CTGATCAAAG GGCAAATCTT TGAATAATC CTCTGTCCTA ATCAAGGTGT CTCCTGTTGC	180

1104

CAGAATCAAT TTTTCCCCCT GTGCCTTAAG TTTATCCAAG GCTGTTTTTG CTTCTTTTCT	240
CAAAGGAGTA TGAATGCAGA ACATTCCAAT CAATTCATTT TGATAAGCCA AGAATAAGAG	300
ATTGTAGTGA CTCTGTACT CTTCAATTAA AGCATTTTGT TCTGAACTGA TATGAATCTG	360
CTCATCCTGC ATCAAGACAT AATTCCCAAT AAGAACTGGT TGGCCATCTA TATGAGATTT	420
GATCCCCTTG CTGCGATAT ATTGGAGTTT CCCATGCATT TCCTCATGTT CAATTCCCTC	480
TATCTCAGCT TGCTTGACGA TGGCATTAGC AATAGGATGA TAAATGTGTT CCTCAAGACA	540
GGCACTGATT CTGAGAATAT CTTCTCACT ATAGTCTCCA AAAGGTAACA CCTTTTCAAC	600
TATAGGATAA CTAGTTGTGA TTGTTCTGT CTTATCAAAC AAGAAAGTAT CAACTCCAG	660
ATATTTCTCC AGAACATCTC CATCCTTAAT CACCATTTC ACGTTCAACC CTTCTTGAT	720
AACTGTCAA TAAGCTACAG GAGTAGAGAT TTTCAAAGCG CAGGAGAAAT CGACCAATAG	780
GAAAGAAATA GCCTTAGAAA AAGAACCTGT CAATAGGTAA GTCAGCCCAG CCCCCAAGAA	840
ATTATATTG ACGACTTTAT CCGCCATCTT GATGAAATAG CGTTGTTTCG TTTTCTTGTT	900
TTCTTCAGAT TTCTTCATCA ACTCAATCAG CTGTAAAATA CGGCTGTTCA TCTGATTATC	960
TGTTACACGA ATGCGTAACT CTCCAGTTT TAATACTGTA TTGTCACAAA CCAAATCAGA	1020
CTCTCTTTTT TCAACTGGAA AACTCTCTCC TGTC AAGGAA CTTTCGTTGA CCATACCTAA	1080
ACCTGAAACT ACTTGTCAT CAAACAGAAT TTCATTTCTT TGAGATAAGA TCAAGACATC	1140
TCCTATTTGA ACATCGGAAC TCTTGATACT AACAAACGTA TCGCCCTGTA CTAGGAATAC	1200
ATCGCTCTCT TTTGCAAGAA GACTCTGTTC TAAATCTGTT GCAGTTTTTT TCAAGGACCA	1260
CTGATCTAAA TGATCCCCA AATCAAGCAT AAACATGATA TTGCTAGCTG TCTTGGATTG	1320
GTTCTATAAC AAAGACAATA AAATAGCCGA ACAGTCCAAG ACTTCCATCG TTAGTyCCTT	1380
ACGCGTAGT GTTTGATAGG CTTCTCTAAT ATAACCCAAA GCCTGATAAC AAGTCCATAT	1440
ATAGCGAATA GGATACGGCA CAAACTACG AAAAGTACA CGCTTAACCG CTGCACCTGA	1500
AACAATAGAA TAAGCACTCT CTTCTCTACG AATGGGAAGA GTCATCAACT CAGAACTTT	1560
CCCTTTATCA ATTCTTTTTA AAAAGGCTTC TGCATTATCT AATACAGAAA AGCCTTCTTT	1620
TATGCGTAGA GTAAAGTGCT GTTGATCCAT GTAAAAGTGG ATAGACTCAA TCCCCTTTTC	1680
ATCTCTCGCC AAGGAACGAA GATAGTCTTG AATATCCAAG GTAAGTGAAA AAGAAGATGA	1740
TAGTCGGATA TGTTGGTATC CTCTATGTAG CACTTTAAAA GACATATTAT TCACCTATAA	1800
GGCTATCTAA TTGCTCTTCT TTTTCTCTT GCTCGTACAA ATATTGGCA TCTTGCAAGA	1860
CATCGTCTCC ATGTTGCTTC ACAACAGAAA CAGATGCATC TAGCTCGTCT TTCAACTTGT	1920
AAGCCTTAGC CAAAGCTTTA GAATAACCTT TTTTAGCTTC CTTACTTGCT AAGATTTTCA	1980

1105

AAACCAAGGCT ACCAAATGCG ACACCACCCA AAAATAATGA AGATTTTTTC GCAACTTTTG 2040
CAACGGTTAA TACTTCTTTT AACATAGGG 2069

(2) INFORMATION FOR SEQ ID NO: 175:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 4597 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 175:

AAATCTTGCG CAATAAAGCT CATCTCCATC TCCCGATTGA AACAGTCACT CCCC GGACTG 60
 TTTCAACGTC CCAAGACATA ATCTTAGGCA GATTTCTAAA ATTACACTCA AAGTGGAAGT 120
 CATTGAGCTT TCGAATGACA GTTGAAGTTG AAATGGCCAG CTGATGGGCA ATATCGGTCA 180
 TAGAAATCTT TTCAATTAAC TTTTGC GCAA TCTTTTGGTT GATAATACGA GGAATTTGGT 240
 GATTTTCTT GACGATAGAA GTTTCAGCGA CCATCATTTT CAAGCAATGA TAGCACTTAA 300
 AACGACGTTT TCTAAGGAGA ATTCTAGTAG GCATACCAGT CGTTTCAAGG TAAGGAATTT 360
 TATAGGGTCT TTAATGTCTA GTAATTTTGT GATAAAATGT AATTGTTCCA TATGATCTT 420
 TCTAATGAGT TGTTTTGTG CTTTTCATTA TAGATCTTAT GGGACTTTTT TTCTACCCAA 480
 AATAGGCTCC ATAATATCCA TAGGGAATTT ACCCACTACA AATATTATAG AGCCCAAAGT 540
 TTTAGGTCGC TTGATAATAT GCGTTTTTTG AATTTTATAG ACTGCTCGTT TAAACTCTAT 600
 TTACTTCGTA CCTTCTGGAG CGAGACGGAA TATTAGTCAC ATACAAAATG AGTACTATTA 660
 GGATTTTATT TTCATGTACA ATTTCAGCCA GTCTTGTTAT AATCAGCCTA TAGGAATCAA 720
 GGAGGTGACT CTTATGGCTG TTTTGTGTC TTTGGATGGA ATTGTGGTAG AAGTCCTTGA 780
 TGTCTTTTCT TCTTTTAATG GGGATAGTGA GTTTTCTTG TGTATAGCAT TTTGAATCTG 840
 GAATAGGACG CCATGACTGC TAAAAGATTT CTATAAATTA ATTTGATTTT CCTAATCAAT 900
 TTGTTTCATAT CTTATTTTCAT TCCACTATAA ACGTCTTAAA GACAAGAGTC AGTTTGTTAT 960
 GGAACGCTCT CAGTTCGAGG AGATGTTCCA ACTTCAAAGT AGTCGCTTGA CGACGCAAGA 1020
 AAAATTACAA TTGTTTACCT CTGTGTTTGC TGGCCGTTAT GATGTTTATG CTAAGAATTT 1080
 TATCAATGAA CAAGGAAAA TTCAGTATTT TCCTTCCTAT GATTATGGTT GGAAGCAGTT 1140
 GCCACCTGAA AAACGGAGTT TCCAGACATT GACGAACTCC GTTTTGAAAT CTCATTTTCG 1200
 TGGGGAGGCA GCTATCGGTA TCTTTCCTAT GCACTTAGAT GATAGCTGTT ATTTTGTGGT 1260

1106

ACTGGATTTC	GATGAAGGAG	ATTGGAAAGA	AGCTGGTTTA	ACCATTTCGAA	GAATAGCCAG	1320
GGAACGCCAG	ATGGAAGCCC	ATTTAGAGAT	TTCTCGTTTC	GGTCACGGAC	TCCATATTTC	1380
GTTCTTCTTT	GAGGAAGCGA	TTCCGAGTCG	AGAGGCTCGC	TTGTTTGGAA	AGAAACTGAT	1440
AGAACTGGCA	ATGCAGGAAA	GTATGCAACT	GTCCTTTGAT	TCTTTTGATC	GCATGTTTCC	1500
AAATCAGGAT	GTCCTTCCTA	AGGGGGGATT	TGGAAATTTC	ATTGCCTTGC	CTTTTCAAGG	1560
AGAAGCTTAC	CATCAAGGGC	GAACGGTCTT	TGTGGATGAA	CAGTTTCAGC	CTTATGAAGA	1620
CCAATGGAGG	TATCTACAAG	AAATTCAGAG	GATTTCAACT	GCTAAAGTGG	CACTGTTAAT	1680
CCAAGAGGAG	TTAGGCAAGC	AAGAATTGGA	TAAGGAGTTG	AAGGTCGTTT	TATCCAATAT	1740
GATCCAACCT	GAAAAATCGT	CTGTGACATC	CAAGGCACTT	TTTTCTTGAA	AAATATGGCT	1800
TCCTTTTCTA	ATCCCGAATT	TTATAGTAGA	TTGAACTAG	AATAGTACAC	CTCTGCTTCT	1860
AAAACATTGT	TAGAAATCGA	TTTGACTTTC	CTGATCGATT	TGTCCTGTTA	TTATTTCAAT	1920
TTACTATATT	TAAAGCAGGC	TATGCGACAG	CCAACCTATC	AAATTCCTGA	GAGAATGTAT	1980
TTATTTGGAG	AATCCGATCA	TTATTTATGG	TTGCCAAGAG	GTTTGCTGTA	TCCATTGCAA	2040
GATAAATTTA	AGCAGGTATC	TGTGGAAGAT	AGGAGAAAGG	TACAAAGGTC	TATTAGCGTG	2100
GAATTTAAGG	GAGAACTCAC	TTTTGAGCAA	GAGTTAGCCC	TGTCAGATAT	GACTTCTAAA	2160
GAAAATGGTT	TACTTCATGC	GGAGACTGGT	TTTGGAAGA	CCGTTTTAGG	TGCTGCTCTT	2220
ATCTCTGAAC	GGAAAACAAA	AACAATTATT	CTAGTCCATA	ATAAGCAACT	CTTAGACCAA	2280
TGGCTAGATC	GCTTAAACTG	CTTTTGTACT	TTCGAAGAGG	AGGAGGCTAT	CCGTTATACG	2340
GCATCAGGTC	GTGAAAAGGT	AATCGGCTAT	GTTGGGCAGT	ACGGTGGGAC	TAAGAAATGG	2400
CTGAGTAAAC	TGGTTGATGT	CGTTATGATT	CAATCTCTAT	TTAAGTTGGA	AAATAGTCAA	2460
AGTCTTTTGG	ATGAGTATGA	GATGATGATT	GTGGATGAGT	GTCATCATGT	CTCTGCCTTG	2520
ATGTTTGAAA	AAGTTGTTCG	TCAGTTTAGA	GGGAAGTATC	TTTACGGTTT	GACGGCTACG	2580
CCTGAGCGTA	AGAATGGTCA	TGAGCCTATT	GTTTTTCAGA	GAATTGGTGA	GATACTCCAT	2640
ACTGCTGATA	AGAGGGAAAC	GGATTTTAAA	CGGCAATTGC	AATTAAGATT	CACCTCTTTT	2700
GGTCATTTGG	AAATTGAAAA	GACCAAAGCA	AGTAATTTTA	TACAGCTTAG	TGATTGGATT	2760
GCTACTGACT	CAGTGAGGAA	TCAGATGATT	CTCAAGGATA	TTCTAGCCCA	AGTGGCAGAA	2820
GGACGGAATA	TCTTGGTTTT	AGTTAATCGA	ATTCAACAGA	TAGATGTCTT	TGAAAAATTA	2880
TTGAAAGAGA	AAGAGGTTGA	TGACTGTTAC	ATTATTAGCG	GAAAAACCAA	AGTCCGAGAG	2940
AGAACGAGTT	TACTGGAGAC	GTTAGAACAG	TTAGATAAAG	GGTTTGTTTT	GTTGTCTACT	3000
GGAAAATACA	TTGGCGAAGG	TTTTGACTTA	CCTCAGTTGG	ACACGCTTAT	CTTGGCAGCA	3060

1107

CCCTTTTCTT GGAAAAATAA TTTGATTCAG TATGCAGGTC GGATTCATAG AAAC TACAAG	3120
GATAAGTCTT TGGTGCCTAT TTTCGATTAT GTGGATATTC ATGTTCCCTTA TTTAGAAAAG	3180
ATGTTTCAGA AACGACAAGT AGCTTATCGA AAGATGGATT ATCGTGTCAT CGAGGGTGAG	3240
GAGAAACAAT TCGTTTATGT TGATAGTAGA TATGAGAAGG TGTTGAGAGA GGA CTTAGCA	3300
GGGGAAAGAC AGGAATGTCT GCTTATTTTA CCTTATGTGC ACCAGACAAA ACTGATGAAT	3360
TTTCTAAAAG AATTTAGGAT TAGTCAAATT GAGATATGTA TACCAGAGAC GGT TGCAAAT	3420
AAAGCATGGC TAGACCAGTT GAAGAGCCAG AAAATTAAAG TGTCTTTTAC TCAATCAAAA	3480
ATAGTAACGC CTATTCTTTT GGTGAATAAG ACTATTGTTT GGTATGGTGC AATGCCATTA	3540
TTAGGGAAGG TAGATGAGAT GACCATATTA CGTTTGAAT CAGCTAGTAT AGTTTCTGAA	3600
CTAGTGGCAG GTTTACGATA GAGAAAATTT TTA AAAATTT CTATGTATGA TTTTCATTTT	3660
TTTAGTGAGA CTGTTGCCAT TATCACATTC GAATCACACA AAATAAAAAA ATTTTATATA	3720
GTACTTGACA AATAGATTGA AATATCATAA AATAAAAACG GTTACAGAGT TATTAATTAT	3780
TTAAGCTTCA TGTCACCATT AAAAATTGAA ATAAAGGAT GTTATCACTA ATACAAGTGA	3840
GCAGGAACCT ATTTAATCAC ATCAGAAGAA GTTCTTGAT GTTTTAAAGT AGGTTCCCTT	3900
TATTTTAAAA GGGAAATTTT ATGATCATAA AACGAATACT AAACCACAAT GCCGTAATTG	3960
CGCAAAGTAA AAAAGATATC GATATTCTTC TTTTGTGAAG GGAATAGCT TTTGGAAGAA	4020
AAACTGGAGA TAAAGTAAAT CCAATTGATA TTGAGAAAAG TTTTTTCTC AAAAATAGAG	4080
ATAATATGAC CCGTTT TACA GAGATGTTA TTAACGTTCC TTTGGAGTTG GTGTACATCA	4140
CCGAAAAAAT AATTAACCTA GGTA AAAATAA CAT TGGGTAA TAATTTTGAT GAAATTATCT	4200
ATATTAATTT AACGGATCAT ATTTCTTCGA GCATAGAACG TTATAAAGAA GGGATTATTA	4260
TTTCGAATCC CCTACGCTGG GAAATATCGA AATATTATAA AGAAGAATTT GAACTTGGGA	4320
AAAGGGCTTT ACAAATAATA AAAAAAGAGT TAGGTATTGA ACTTCCAATT GACGAAGCTG	4380
CATTCATAGC GCTACATTTT GTTAATGCTA ATTTAGAAAA TAATTTTCAA GAGTCGTATA	4440
AAATCACTGA AATAATTATG GGAATTGAGA AAATCATTCA AGATTCTAT TGTA CTGAGT	4500
TTAACCAAGA TTCTATTGAT TATTATAGAT TCATAACTCA TATGAAATTA TTTGCCCATC	4560
GCTTGGTTGA GAATACA ACT TATTGTGACG ATGATGA	4597

(2) INFORMATION FOR SEQ ID NO: 176:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 3984 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double

1108

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 176:

CGGCTTATTT ACTACTTGTT CCATCATATA TGGAAATATGC ATGAAACCTG CTCTCATATT	60
AGGGAATTTT TTATCCACTA AATAAGAGC TTGGTACATC AAATGATTGC AAACAAAGGT	120
TCCTGCACTA TTGGATACAA CTGCCGGAAG TCCCTGTTTT TTGATAGCTT GTACCATCGC	180
TTTGATAGGT AAACACTAA AATAGGCCGA TGCTCCATCA ATACGAATCG GTGTATCAAT	240
TGGTTGATTG CCTTCGTTAT CAGGTATGCG AGCATCATCT TGATTAATAG CCACTCGTTC	300
AGGTGTTAAG CCGGTCTGC CGCCTGCTTG TCCAATACAA AGTACAGCAT CTGGTTGATA	360
TCGTAATATT TCTGCCTCTA AAACCTCTGA CGACTTATAA AAAACCGTTG GAATTTCTAC	420
CCAGCGAACT TCAGCCCAT TAATCTCAGA TGTAATAAT TTTACAGCCT CCAAAGCTGG	480
ATTAATCTTT TCACCTCAA AAGGATTAAG ACCTGTAACC AATATTTTCA TTTTATTTTC	540
CTTTACTAAA ATGCGAGAAA GTACATTAAG AATATGTGAA TAACAATCAT TACTAGAGCA	600
ACACCTGCTT GAGCCTTTAT AACGCCATTC TGATCTTTCA TATCCATCAA TGCTGCTGGT	660
AGAGCGTTAA AATTAGCAGC CATTGGGGTC AATAAGGTCC CACAATAACC TGCTGTCATG	720
GCAAGAGCAC CAGCCACAAT TGGATTAGCT CCCAGAGCAA ATACAAAGGG AACTCCAACA	780
CCTGCTGTAA TAACGGTGAA TGCTGCAAAA GCATTTCCCA TAATCATTGT GAATAGAACC	840
ATTCCAAGAA CATAGGCCAA AACTCCTATA AAGCGACTAT CTGAAGGAAC AATACCGCTA	900
ATCAGATGAG AGATAACATC ACCAACACCT GCTACAGTAA AAATAGCCCC CAAAGCCCCCT	960
AATAATTGAG GAACAATCCC ACTTGTTGAA ACTTGCTGAG TCATTTCGATT ATTTTCTGAT	1020
AACAGACTCT TAGGGTGAAT ATTGTAATC ACAAGAAGCAG AAATTGTAGC AAACAAGGCG	1080
GCAAGGCTAA TCGAAATCTT GCTAAATCTT GGAATCATTT GCGCTAAGAC CAACGCAAGT	1140
ATTGCCATCA GCATAACTGG AATAAAAAAT TTTATTTTCA ACCTGTTAGA TTCAATATTG	1200
GCTTTCATTT CATCTAAGGA TGGCAAGGTT CCGATACGGA CTTGCTTAAA CAATGTTAAC	1260
AGCGATAATA GGATTACAAT AATACCAATA CTCATATTG GCATATAGGA ACCACCTATA	1320
AACGTAATAG ACAATAGAGT CCAAAATGCA GATGTCCCAA GTCGAACTGG GTTTGTTTGA	1380
TCTTTATAAC TACAATAGGC TGTATGGAGA AATTGACAAC CAATCACAAT ATAGGTCAAC	1440
TCTAATAGTT GCTTTGCCAA CTCTGTCATT TTTGTTCTCC TCCCCTAGTC TTTTGTGATA	1500
TCAATTTTTT ATCAAATAAA TAATTATAAA TCCCCACTAC AATAAGTGTT ATAACAGCAA	1560
CAATAATAGA TGTAAGCA ATCCCTGCAT AATTGCTTTC ATAGCCTAAC TGATCTAATG	1620

1109

TTCCCCCTAT CAAGAGGACT CCCCCAGCAC CTACAAACGT ATTTTGAGCA AAGAAATTC	1680
CAAAATTTTC ATTCGCAGCC GCACGCGCTT TTATTGTCTC ATCTTCAACC TCTGTAACT	1740
TTCTACCTAA TTGAGACTCT GCAGCTGCTT CTCCCATAGG TTGAACCAA GGTCTGACAA	1800
ACTGAGGGTG TCCTCCTAGA CGAATTGAAA AGAAACCAGC TAACTCTCGA ATAAAGAAAT	1860
AAACTGTATA GAAGTTTCCA ACTGTCAGAC CTTTAATCTT TCGAATCAAA TCGATTGATC	1920
GTTGCTTGAG TCCAAAGGTT TCTGACAGCC CCACAAGAGG CAAGGTAACC ATAAAAATCG	1980
TGAGCACTCG CTGATTGCTA AATTCTTTTC CAAAATCTC CAAAAATTCA ACGAGAGAAA	2040
CACCTGAAAC TAAAGCTGTA ACCAAACCAG CTAAGACTAC TGTGCAATT GTATCAAATT	2100
TTAAATATAA ACCCACAACA ATGATTGCTA TTCCTATTAA TCTAATCCAC TCCATATCAA	2160
ACTCCTTTAT ATTCAAAATG ACAGTATTTT TAAAAATTTA TCAAGATCAA TACCATTCTT	2220
TATTTAATGT GTTTTCTAG TTCTTTTGG TATTGTCTAT TGGATTCCAA TTTTCTTTT	2280
TGCCATTTTT TAAAAACCTC GTTATATTCT TTTGTGTAA CAATATCTT TTGCAATTC	2340
ATTCCTTTAA AGATATATGG ATCCCCCTTA ATACCAACTT GTGAGTATGG TTTTGAGAAT	2400
GGTACTACGT TACTTACAAC TGGAGAACCA CCAGATGAAG CTGTTGGCAT CAATAATGAA	2460
CTATCTGTCG ACCAAGCTTG AGCTTTGGCA TATTTTTCAT ATCTTTTCTC TAGGTCAGTG	2520
GTCTCAGAAA CAGCATCTTC TAACAATTC TTATATTAT CCAAACCAGG TTTAGTACA	2580
ACATCCTTAT CTTTTCCTTT CGTAATACCA AGGTGTTTCA TGGCAGAACC AGATTTTGA	2640
TCTATAATAT TCAAGTGAGA CGCTGGATCT TGATAGCTTG GAGCCCATCC TGTACTGTTC	2700
AAATCATAGT CTTTTTGAGA AGGAGCAACA TTGCCGTATT TATCATTTTC CATCAAACCA	2760
TCAATAACAT TTCCAATAAC GTCTGTCTC GATGTTGAG TCGCTATACT GTAGCCCAAT	2820
GATGCTGGAT CTA CTGCATA GACATAAGAA AATGTTGTCG GTGCATCTGC TTCTTTATCA	2880
GTTTTCCAC AAGCCACTAA AATAGCTGAC GTGCTCAGGA CCACTCCTGC TGTTAAGAGC	2940
CACTTTTCT ATTTCAATAA GAATCTCTT TGGTTTATTT TAATCTACTT TTACAATCCA	3000
ACCTTCTGGC GCTTCAATAT CGCCAACTG AATACCCGTC AATTCATTAT ATAATTTACG	3060
CGTCACAGGA CCTACTTCTG TTCACTATA GAATACATGG AAATCATCAC CATGTTGAAT	3120
ACCTCCAATT GGAGAAATAA CCGCTGCTGT ACCACAGGCA CCTGCCTCTA CAAAACGGTC	3180
AAGATTATCA ATTGGAACAT CACCCTCAAT AGGAGTTAAT CCCAAGCGAT GTTCTGCCAA	3240
ATAAGCAAG GAATACTTGG TAATAGATGG CAAGATAGAT GGACTCAATG GTGTTACAAA	3300
TTCATTATCA GCTGTAATTC CAAAGAAGTT AGCTGATCCG ACTTCTTCAA TCTTTGTATG	3360

1110

AGTTGATGGG TCCAGATAGA TAACATCTGA GAAATGACGT GACTTGGCCA TTTTTCCTGG	3420
TAAGAGACTT GCAGCATAGT TTCCACCAAC CTTAGCCGCA CCTGTACCAT TTGGTGCTGC	3480
ACGGTCGTAC TCATCCTGAA TCAAGAAGTT GGTGGGACC AAACCACCTT TAAAGTAATT	3540
TCCAACGGC ATAGCAAAGA TGGTGAAAAT GTACTCTTCT GCCGGTTTTA CCCCATAAT	3600
ATCTCCGACA CCAATCAAAA GAGGGCGAAG ATATAAGGTT CCACCTGTTC CGTATGGTGG	3660
TACGTATTCT TCATTGCGAC GGACAACTGC TTTACAAGCT TCTACAAACA TGTCTGTCGG	3720
AACTTGTTGGC ATCAAGAGAC GGTACATGT ACGTTGCAGA CGTTTAGCAT TTTCATCAGG	3780
ACGGAACAGT TGAACACTGC CATCCTTAGT ACGATAAGCT TTCAAACCTT CAAATGCTTG	3840
TTGTCCATAG TGAAGACTTG GAGAAGACTC TGAATATGC AAAGTTGCAT CCTCTGTAAG	3900
CTCTCCTTGA TCCCATTGTC CATTTTTGAA ATGAGCAAGA TAGCGATAAG GTAATTCAT	3960
ATAGGAAAAA CCGAGGTTTT CCGG	3984

(2) INFORMATION FOR SEQ ID NO: 177:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 8703 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 177:

TATCTAATTA TTGGTTTTTA TCGCTGACCT TGGCTATTGT TGGGGTTGTT TTACCCTTGT	60
TGCCTACAAC ACCTTTCCTT TTGTGTCTA TTGCTTGTTC CTCCAGAAGT TCCAAGCGAT	120
TCGAAGATTG GCTTTATCAT ACCAAGCTCT ATCAAGCATA TGTAGCTGAT TTTCGTGAGA	180
CCAAGTCTAT TCGCGTGAA CGAAAGAAAA AAATCATCGT CTCTATCTAC GTCTTGATGG	240
GAATTTCTAT TTATTTTGCA CCTCTTTTAC CAGTCAAAAT CGGTCTGGGT GCTTTGACCA	300
TCTTTATTAC TTATTATCTC TTCAAGGTCA TTCCAGACAA AGAATAGTTA AAACAGTAGT	360
TATTTGCCTT GATAAAATTG AAAGCATATT CATAACAATA TGATATAATA AAATTGAAGT	420
AATATTCAAG GAGAATCAAA TGATTTACGA ATTTTGTGCT GAAAATGTGA CTTTACTTGA	480
AAAAGCGATG CAGGCTGGAG CTCGTCGGAT TGAACCTCTG GATAATCTAG CAGTTGGTGG	540
GACAACACCC AGCTATGGAG TGAATAAGGC AGCGGTTGAA CTGGCAGCTA ACTACGATAC	600
AACCATCATG ACCATGATTC GGCCACGTGG TGGTGACTTT GTCTATAATG ACCTAGAAAT	660
TGCTATCATG CTAGAAGACA TTCGTTTGAC TGCTCAGGCT GGAAGTCAAG GGGTTGTATT	720
TGGAGCTTTA ACTGCTGATA AAAAGTTGGA TAAGCCTAAT CTGGAAGT TAATTGCTGC	780

1111

ATCAAAAGGA ATGGAAATTG TCTTTCACAT GGCCTTTGAT GAACTAAGTG ATGAAGATCA	840
AGCGGAAGCT ATTGACTGGC TCAGTCAAGC CGGTGTCACG CGTATCCTAA CTCGTGCTGG	900
TGTGTCTGGC GACTCCTTAG AAAAACGTTT TGTTCACAT CACAGAATT TGGAGTACGC	960
TAAAGGTAAA ATTGAAATTC TACCAGGTGG GGGGATTGAC CTTGAAAACC GTCAAACCTT	1020
TATCGACCAG GTGGGGGTAA CACAATTGCA TGGTACTAAG GTTGTTTTTT AAAAAATAGA	1080
AAGGAAGTGC TAGCTTTGGG TAGCAGTTTT CACTTATGTT TGAAATTTTT AAATCCTATC	1140
AATTTAATCA AGAAAAGGCT CATGATTATG GTTTTATAGA AAATAGCGAA GTCTGGACAT	1200
ATAGTTGCCA GATTTTGCAA GGTGACTTTG TCATGACTGT GTCCATCACT GCTGATAATG	1260
TGAACTTTCA AGTCTTTGAC CAAGAGACTG GTGACCTCTA TCCTCACGTT TATATGGAAA	1320
GCATGAGGGG AAGTTTTGTC GGAAATGTCC GTGAGGCTTG TCTGGAGATT CTTTACCAGA	1380
TTCGGAAGGC TTGTTTTGAT GTGCAAGATT TTATCTGTCA TCAGACTAAG CGTATCATGA	1440
CTCAAGTTCA GGAAAAGTAT GGAAACCACT TGGAGTATCT GTGGGAAAAA TCGCCTGATA	1500
CAGCTGTATT GCGCCATGAA GGCAATCAAA AGTGGTATGC CGTCTTGATG AAAATCTCTT	1560
GGAATAAGCT GGAAAAGGGC AGAGAAGGAC AAGTGGAAGC AGTCAACCTC AAGCATGACC	1620
AAGTAGCTAA TTTGCTTTCA CAAAAGGGGA TTTATCCAGC CTTCCATATG AGCAAGCGCT	1680
ACTGGATTAG TGTGTCCCTT GATGATACTT TATCAGATGA AGAAGTACTG GAATTGATAG	1740
AAAAAAGTTG GAACTTAACC TCTAAAAAAT GAAATATTTT AATAATTTTC ATGAACTTTC	1800
AATTAGCTAA ATATTCTTTA CTGAAGAGAT TTTTAGAAAA TATAGGATTT ACCACACTAG	1860
AGGAATATGG TGCCATCTTC AAATACCTGA TTGAGAATGT CAAGACGGAT CGTCAGATCA	1920
TCTATTGCCC TCACTGTCAAT GATGACCTCG GAATGGCAGT GGCAAATAGC CTTGCTGCTG	1980
TCAAGAATGG TGCAGGACGT GTTGAAGGGA CTATCAATGG TATTAGGGAG CGAGCTGAAA	2040
ATGCTGCTTT GGAAGAAATT GCAGTGGCTC TCAATATTCG CCAAGATTAC TACCAAGTAG	2100
AAACCAGTAT TGTCTAAAT GAGACCATCA ATACGTCAGA AATGGTTTCT CGCTTCTCTG	2160
GTATTCCAGT TCCTAAAAAC AAAGCCGTCG TTGGTGGCAA TACCTTCTCC CACGAATCTG	2220
GTATTCACCA AGATGGAGTC CTTAAAAATC CTCTCACTTA TGAGATCATC ACACCTGAAT	2280
TGGTTGGTGT TAAGATTCTG CTTGGAAAAT TATCTGGTCG CCATGCTTTT GTTGAGAAAC	2340
TGAGAGAATT GGCCCTAGAT TTACAGAAG AGGATATCAA ACCACTCTTT GCTAAGTTCA	2400
AGGCACTGGT CGATAAGAAG CAAGAAATCA CAGATGCAGA TATTGAGCTT TTGGTAGCTG	2460
GAACCATGGT TGAAAATCCA GAAGGCTTCC ACTTTGATGA TTTACAACCT CAAACTCATG	2520

1112

CAGATAATGA CATTGAAGCG CTCGTTAGCC TAGCCAATAT GGATGGTGAG AAAGTCGAAT	2580
TTAATGCGAC AGGGCAAGGT TCCGTTGAAG CAATCTTTAA TGCTATCGAT AAGTTCTTTA	2640
ACCAATCTGT TCGTTTGGTG TCCTACACTA TCGATGCGGT AACAGATGGA ATCGATACCC	2700
AGGATCGGGT TTTGGTCACT GTTGAAAACA GAGATACAGA AACCATCTTT AATGCAGCAG	2760
GGCTTGATTT TGATGTGTTG AAGGCTTCTG CTATTGTCTA TATAAACGCT AATACCTTTG	2820
TTCAAAAAGA GAATGCAGGT GAGATGGGAC GCAGTGTTC TTACCACGAT ATGCCTAGTG	2880
TGTAAAGGAG AAGGCTATGG CAAAGAAAAT AGTAGCTCTA GCAGGAGACG GAATTGGCCC	2940
AGAAATCATG GAGGTGGTT TAGAAGTTCT GGAGGCTCTA GCTGAAAAA CAGGTTTGA	3000
CTATGAGATT GACAGACGAC CGTTCGGAGG TGCAGATATT GATGCAGCAT GACCTCCCTT	3060
ACCTGATGAA ACCCTTAAGG CAAGTAGGGA AGCAGATGCT ATCCTACTAG TAGCTATCGG	3120
TAGTCCTCAG TATGATGGAG CAGTGGTTCG CCCTGAACAA GGCCTGATGG CTCTCCGTAA	3180
GGAACTCAAT CTTTACGCTA ATATTCGTCC TGTAAAAATC TTTGACAGTC TCAAGCATTT	3240
GTCACCACTC AAAC TGGAAC GAATGCTGG TGTAGACTTT GTCGTGGTGC GTGAATTGAC	3300
AGGCGGGATT TACTTTGGAT ATCATATTCT TGAAGAGCGC AATGCGCGTG ATATCAACGA	3360
CTATAGCTAT GAGGAAGTGG AGCGGATTAT TCGCAAAGCC TTTGAAATTG CAAGAAATCG	3420
CAGAAAAATC GTTACTAGTA TCGATAAGCA AAATGTTCTA GCGACCTCAA AACTCTGGCG	3480
GAAAGTAGCT GAGGAAGTCG CACAGGATTT CCCAGATGTA ACCTTGGAAC ATCAGCTGGT	3540
AGACTCAGCT GCTATGCTTA TGATTACCAA TCCTGCTAAG TTTGATGTTA TTGTAACGGA	3600
GAATCTTTTT GGAGATATTT TATCTGATGA ATCAAGCGTC TTATCTGGTA CACTTGGGGT	3660
TATGCCATCA GCCAGTCATT CTGAAAATGG ACCAAGTCTC TATGAACCTA TTCACGGTTC	3720
AGCACCTGAT ATTGCAGGTC AAGGAATTGC CAATCCTATT TCCATGATTT TATCAGTTTC	3780
CATGATGTTG AGAGATAGTT TCGGACGTTA TGAGGATGCA GAGCGTATCA AACGTGCTGT	3840
TGAGACAAGT CTGGCGGCAG GAATTTTAAC GAGAGATATA GGAGGTCAGG CTTCAACAAA	3900
GGAAATGACG GAAGCTATTA TTGCAAGGTT ATGAAGTTAG ACGAAAAAT TACTCTAGTC	3960
CTTTTGATTT GGAATGTCAT CATTTTCTTG ATTTATGGTA TTGACAAATC TAAGGCAAGG	4020
AGAAGAGTTT GGCGCATCCC TGAGAAAATC TTACTTATTT TAGCCTTTAC TTTTGGTGGT	4080
TTTGGTGCCT GGCTAGCAGG AATCATCTTT CACCACAAGA CTCGAAAATG GTACTTTAAA	4140
ATAGTTTGGT TTCTTGGGAT GGTGACCACA CTAGTAGCCT TATATTTTAT TTGGAGGTAA	4200
TGGATGGCAG GGTCTTCGAG GGAATACGCT GCTTGGGCTC TAGCGGACTA TGGTTTAAAG	4260
GTCGTGATTG CAGGATCTTT CGGTGACATT CATTACAATA ATGAACTCAA TAATGGCATG	4320

1113

TTGCCAATCG TTCAGCCTAG AGAGGTTAGA GAGAACTAG CCCAGCTAAA ACCAACCGAC	4380
CAGGTAAC TGGA CTGACTTGGG ACAACAAAA ATCATCTCAC CAGTTGAAGA ATTCACCTTC	4440
GAGATAGATA GCGAGTGGA ACATAAACTC CTAAATAGTT TGGATGATAT CGGTATTACC	4500
TTGCAGTATG AAGAGTTGAT TGCTGCTTAT GAAAAACAAC GACCAGCCTA CTGGCAGGAT	4560
TAGAAAAAAT AGAAAAGGAG ATATAGTAAA CTGAAATAAG ATGTAAACAA ATGAATTGGA	4620
GCTTAACATC CATTTCCAGC AATTTTCTAG AAACCTACAGT GGACTATTCT GGATTCAACA	4680
CATTATAAAA TTATGACAAA ACACATTTCAC AAGAAGGCTA CGACATTTTA AAAGGTGAGG	4740
GCGGATGTAT CGTTTGCCCT ACTAAAGTTG GTTACATTAT CATGACCACT GACAAGGCAG	4800
GACTTGAGCG TAAGTTCGCA GCCAAAGAAC GTAAGCGTAA CAAACCAGGT GTTGTCTCTCT	4860
GCGGTAGCAT GGATGAACTT TCGGCTTTAG CGCAACTCAA CCCAGAAATT GAAGCATTTCT	4920
ACTAAAAACA TTGGGATGAA GATATTCTTC TTGGTTGTAT CCTTCCTTGG AAACCAGAAG	4980
CCTTTGAAAA ACTCAAAGCA TACGGGGATG GCCGTGAAGA ACTTATTACT GATGTACGTG	5040
GTACTAGCTG TTTTGTATC AAGTTTGGA AAGCAGGTGA ACAATTGGCT GCCAAGCTTT	5100
GGGAAGAAGG TAAAATGGTC TACGCCTCAT CTGCTTCAAT GACAAAACGA TTGAAACTCG	5160
CTATGAGCAA GGTGTAATGG TGTCTATGGT CGATAAGGAC GGCAAACTCA TCCCAGAACA	5220
AGGAGGAGCA CGTTCAACTT CACCAGCTCC AGTTGTGATC CGTAAAGGGC TTGACATTGA	5280
TAAAATCATG ATGCACCTGT CAGATACTTT TAACTCATGG GACTACCGTC AGGTTGAGTA	5340
TTATTAGGAT AGAGAAGAAG TCTAGTGTTA TGAGATATTA AAGCTCCTAA CACTGGGCTT	5400
TTGTTTAGAA TTTCTTTTCT TTTTCTATAG GATATGGTAT TCTATGTAGA AAATATATGT	5460
TAATAAGTAA TGCCAATATT TAAACATCAT TAGTAAAAGG AGTTAGATTG ATGAATAAAA	5520
GAAAAGTTAG TTTAGAAGAT TTTTATAAAT GGTATAGTCT AAATAAAGAA GAGTTATTAA	5580
ATAAGGCAAC TGTGGTGAA AAGTTTAATG ATAAATTAAA AGAAGAGTTT CTCCAGGAAT	5640
GGCCTTTGGA TAGGATTTTA ACAATGTCAA TCGATGAATA TGTAATAGGA AAGGGACAGC	5700
AAAATAAGTC TTTATGCTAC GCTCTTGAGA AGGGAAAATA CAAAAATCTA TTTCTTGGA	5760
TTTCTGGTGG CTCAGCTTCA AAATTGGTA TTTATTGGA TAAAAACA AACAAATATA	5820
AAGATCAAGC TAATAATGAG ATTTTCAGAGT TGGATCAGCG ATTTTCAAAA TTAAATCAG	5880
ATTTGTATGA AATTATCAAA GAAGGTATTC GTTTTAACCT TGAAAATCCT ATTTTGTATA	5940
TGAAAAGATC AACAAATGAA TTTATTGGTC GTTCTGCTAT GGTGACAAA TTACTTTGTA	6000
TCTATACTGA GGGAGATCCT TTCTTTGGTG TAAATATTAA TAGTCAGAAA GAATTTTGGA	6060

1114

ACCACTTTGT TTCTCAGACA AATCAAGGTG GACCTTATCT GCAAAATCAT AAAATAATTG	6120
AACTGGTGTC CAAAACCTAT CCTGAGTTGG AGCCATCGAA ATTAGGAACT ATGCTTTTTG	6180
AGTATTCTAA GCTTTTTATG GAAAATAAGG AAGACAATAG TACAATGGAT TCATCAAACA	6240
ATTTTCGTCA TCAATTAACT CAATCTCTAT TAAAGTCTCC AAACCTCATC CTCCGCGGTG	6300
CTCCTGGCAC GGGAAAAACT TATCTTGCTA AAGAAATGTC TAAAGAATTA ACGGATGGCA	6360
ACGAAGATCA AATCGGATTT GTACAATTTC ACCCATCATA TGATTATACG GATTTTGTAG	6420
AAGGTTTAAAG ACCAGTATCA AATGGGGATG GAGCTATTGA GTTTAGGCTA CAGGACGGTA	6480
TTTTTAAAGA TTTTGTCTAG AAAGCAAAAG AAACCCAATT GATTGGAGGA CAAGATAATT	6540
TTGATGAGGC TTGGGATCTT TACTTAGAAT ATATAAATGT TGCTGAAGAA AAAGAATATA	6600
TAACAAAAAC ATCTTACTTA TCTGTTAATA GTAGACAAAA TTTGTCAGTA AATTATGATA	6660
GTGGTGTTC AGGATGGTCA CTACCTAGCA AATATGTTTA CGAGTTGTAT AAAGATAAAA	6720
ATTATAATAA GCAAGAATAC TACAAAAGTG GTGGAAAAAC TGTCTAGAA ACATTGAGAA	6780
AGAGATTTGG TTGAAAGAC TATGTTTCCC CAACAGAAAT TGATACTGAT AAGAATTTTG	6840
TCTTCATCAT CGATGAGATC AATCGTGGGG AGATTCTAA GATTTTGGC GAACTCTTTT	6900
TCTCTATCGA CCCC GGCTAT CGTGGTGAAA AAGGAAGTGT TTCTACCCAA TATGCAAATC	6960
TACACGAAAC TGATGAAAAG TTCTATATCC CCGAAATGT TTACATCATC GGAACATGA	7020
ATGATATTGA TCGTTCAGTG GATACCTTTG ATTTTGCTAT GCGTCGTCGT TTTCTGTTTG	7080
TTGAAGTTAC TGTGAGGGT CAAGCTGGCA TGTTGGATAA AGAGTTGAAT ATCCATGCAG	7140
AAGAAGCAAA AATTCGTCTA AGAACTTGA ACGCTGCTAT CGAAAATATT CAGGAATTAA	7200
ACAGTCATTA TCATATTGGA CCAAGTTATT TTCTTAAGTT GAAGGATGTA GATTTTGACT	7260
ATGAATTACT CTGGTCTGAT TATATTAAGC CTCTCCTAGA AGACTACTTG CGAGGTTCTT	7320
ATGATGAGGT TGAACTTTG GAaACTTTGA AAAAAGCATT TGATCTGACA AATAATGAGC	7380
AAAAAGATCA GGCAGTAGCT GATGACAATG AAGGCGATGA AAACGATGAT GCGGATTACT	7440
GATAATCAAC ACAAGATTAT TAAAGAAAAA TTTGTTGAAG AATATCCTAA ACTAAGCAAT	7500
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AATGATTWGA CTCATACTCC TGATTTGGAT AAGGACCAAA AGATTTTGA AACAGTCAAT	7620
CAGAAAAATCA AGACAGGGAA CGTGATTGGT TTTCTTGGAT ATGGTCAGGA AAGATTAAACG	7680
ATTCCTCAC GATTTTCTGA TGAGAGTAAT GACCACTTTT TGCATTATCT CTTAAACAAG	7740
GTCTTCATA TCAATCTCAC TAGTTTAGAT GTTGCTTTGT CTCGTGAAGA GAGGCTTTAT	7800
CAACTTTTGG TGTATCTCTT TCCCAAGTAT CTACAAGCTG CTATTCGAAA AGGTCTTTAT	7860

1115

AAGGAATATC ATCGATTTTC TCATAACGAC AGTCATGTTA AGGGAGTGAT TGATGTAAGA	7920
AACCATCTCA AGAAAAATCT TCCTTTCACG GGAAATATTG CCTACGCAAC GAGAGAGTTC	7980
ACCTATGATA ATCCCTCAT GCAGTTGGTC CGTCACACTA TTGAATACAT TAAGAATCAG	8040
AAAAGCATTG GTCAAGGGGT ACTAGATAAT CTCTCAACTA GTCGTGAAAA CGTATCTGAA	8100
ATCGTGCGTG TAACGCCCTC TTATAAACTA GCTGATCGTG CTAAGATTAT TCGGGGAAAT	8160
CAATCTAAAC CTATACGTCA TGCATACTTT CACGAGTACA GAAACTTACA AGAACTTTGT	8220
CTGATGATCC TAAACCAAGA AAAGCACGGT TTAGGGTATC AAGATCAAAA AATCTATGGT	8280
ATTCTCTTTG ATGTTGCCTG GCTTTGGGAA GAGTATGTTT ACACCTTGTT GCCAAAAGGT	8340
TTTGTACATC CCAGAAATAA GGATAAGACG GATGGAATTT CAGTATTTTC TGTGGGAAA	8400
CGAAAAGTAT ATCCAGATTT TTATGACAGA GAACGAAAGA TTGTCTAGA TGCAAAATAT	8460
AAAAAAGTGG AATTGACTGA AAAAGGAATC AACCGTGAGG ACTTATTCCA GCTGATTTC	8520
TATTCTTATA TTTTAAAGC TGAGAAGGCT GGACTGATTT TTCCTAGTAT GGAGCAGTCA	8580
GTAAATAGTG AAATAGGAAA AGTAGCTGGC TATGGAGCTC AATTGAAGAA GTGGTCTATT	8640
CGAATCCCTC AGAATGCCTC ATTCTATAGT ACATTTTGTA AAATGATGGA AAATTCAGAA	8700
GAG	8703

(2) INFORMATION FOR SEQ ID NO: 178:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 4854 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 178:

CATCACCAGT TTTAGATGGC TTTAACAGTG AAATTATTGC TTTTAATCTT TCTTGTTGCGC	60
CTAATTTAGA ACAAGTACAA ACAATGTTGG AACAGGCATT CAAAGAGAAG CACTACGAGA	120
ATACGATTCT CCATAGTGAC CAAGGCTGGC AATATCAACA CGATTCTTAT CATCGGTTCC	180
TAGAGAGTAA GGAATTCAG GCATCCATGT CACGTAAGGG CAACAGCCAA GACAACGGTA	240
GGATGGAATC TTTCTTTGGC ATTTTAAAT CCGAAATGTT TTATGGCTAT GAGAAAACAT	300
TTAAATCACT TAACCAATTG GAACAAGCCA TTATAGACTA TATTGATTAT TACAACAATA	360
AGAAAATTAA GATAAACTA AAAGGACTTA GTCCTGTGCA GTACAGAACT AAATCCTTTG	420
GATAAATTAT TTGTCTAACT GTTTGGGGGC AGTACACAAG AAAGCGCTTT AAAACCAGTA	480

1116

GACCTTTTCA	TAAGGTTTCGC	TTGATGTACC	AAGATGAGGC	TGGTTTCGGT	AGAATCAGTA	540
AACTGGGATC	TTGTTGGTCT	CCAATAGGAG	TAGGTCCACA	TGTCCATAGT	CACTATATAC	600
GAGAATTTTCG	CTATTGTTAT	GGAGCTGTTG	ATGCCCATAC	AGGCGAATCA	TTTTTCTTAA	660
TAGCTGGTGG	ATGTAATACT	GAGTGGATGA	ACGCCTTTTT	AGAAGAGCTT	TCACAAGCTT	720
ATCCAGATGA	TTATCTTTTA	CTCGTTATGG	ACAATGCTAT	ATGGCATAAA	TCAAGTACCT	780
TAAAGATTCC	GACTAATATT	GGTTTTACCT	TTATTCTCTC	ATACACACCA	GAGATGAACC	840
CATTGAACAA	GTGTGGAAAG	AGATTGTA	ACGTGGATT	AAGAATAAAG	CCTTTCGAAC	900
TTTGGAAGAT	GTCATGAATC	AACTCCAAGA	TGTCATACAA	GGATTGGAGA	AGGAGGTGAT	960
AAAGTCCATC	GTTAATCGGA	GATGGACTAG	AATGCTTTTT	GAAAACAGAT	GAGTATAAAA	1020
TTGAATTGCT	TATAAAAAAG	CTCCATACAC	TGGATGTGTA	TAGAGCAATG	GGGCTTTTAT	1080
TGATATAGAG	TTCTTGGTTT	TTTAGGACAA	TTTCTCGGAT	ACTTGCAAAC	TTTTTAAGTT	1140
TTTTGATTTC	TTCTGGATGA	GTGACGAGAG	TGATAACATA	ACCTTCCTTG	CCCATACGAC	1200
CAGTACGGCC	AGCACGGTGT	GTGTAGGTTT	CGTATCTCT	AGGAATATCA	AAGTTTACGA	1260
CACATTCTAG	GCTATCGATA	TCAATTCCAC	GAGCCAAAAG	GTCAGTTGCA	AGAAGCAGGG	1320
TTAGTTGGTT	ATCTTTAAAC	TTTTCTAAGA	TGATTTTTCT	AAATTTAACA	TTAACATCAC	1380
TAGCGAGGGA	AACAGCCAAT	ATATCACGAT	ACTGTAGTTT	TTCTCGGCA	TTCCCAAGGT	1440
CTGACAGGCT	ATTGAAGAAG	ACTAGACCAC	GGAAATCCTC	TACATGAGCC	AGTTTTCGTA	1500
GCATATCCAC	TCGATGACGT	TGGTCTACCT	GCATGTAGAA	ATGCTGGATA	TTGTCCAATT	1560
TTTGATCAGA	GAGATCAATA	GTGCGTGTAT	TCGGCACAAT	CTTTTCTTGG	TCAAACITGG	1620
TCGTGGCACT	CATGTAGACC	AGTTGGTGGT	CACGAGGTGC	GTAGTGAGTG	ATTTTTTCTA	1680
CAAAGTGAAT	CTGAGAATCA	TCTAGTAATT	GGTCAAATTC	ATCCAGGATG	ATGGTTTCCA	1740
CATTTCATCAT	CTTGATTTTT	TTAAGTTTAA	TGAGTTCAAA	GATACGGCCA	GGAGTTCCAA	1800
TCAGAATTTC	TGGCCCCTTT	TTAAGACGTT	CAATTTGTCT	TTTCTGACTT	GAACCTGAAA	1860
GGAAGAGTTG	AGCAGTCAAT	CCGATAGCTT	CTGCCACGT	TTTACATACA	TCAAAAATCT	1920
GTCCAGCAAG	TTCCGTATTT	GGTGCTAGAA	TCAAGAGTTG	TTGGGCTTTT	TTCTTTTGTA	1980
GTCTGAGAAG	ACTTGGTAGG	AGATACGCTA	GGGTCTTACC	AGTCCGGTT	TGGCTCACTC	2040
CTAGGAGGTT	TTCTCCAGCA	AGAAGGGGCT	CAAATAGTTG	AGTTTGAATG	GGGGTGAATT	2100
CTTGGAACCC	GAGTTGGTCA	CTCAGTTCTT	GCCATTTCAGT	CGGTAGTTTG	GTTTTCATTT	2160
TTCTGCCTCA	AATCTAATGC	CAGCAGTCTG	GCGCATGGTA	TATAGTAGCT	CATGAACAGA	2220
GCCTGCATCA	TACAGCCAAG	TTTGGTAGAG	ATTCAGATCT	GGTTGCTGGA	TCATGTGTGC	2280

1117

AAATGCAGCG	ACTTCCTCAG	TCATCGTATG	AGGAGCCTGT	TGGATAGGAA	GCTGGACTTG	2340
ATTTCCCTTG	TGGTCGGTAA	AAATAGCTGA	GCGAATATGC	TCAATCGTGT	TGAGAGTCAA	2400
GGTTCATCT	GTTGTATAAA	TCTCGCAAGG	AAGATTGGAA	GTGATGTTTT	TTCCAGCCTT	2460
GATGTGAACT	TGATAGTCTG	GGTAGAAGAG	GATACCATCT	CCATTTAGGT	CAATGCTATT	2520
GTCAAGCTGT	TGAGCATGGT	AAGTCGCGTC	ATTGGCTTTT	CCAAAAAGAC	GAACAGCAGC	2580
ATAGAGGGGA	TAAATCCCCA	AATCCATGAG	GGCTCCACCA	GCAAAACGGT	CTGAAAAGAC	2640
ATTTGGTGTT	TGTCCAGCCA	ACAAGTCAGG	CATCTTGGAA	GAGTATTTGG	CATAGTTGAA	2700
ATCTGCTCCT	AACACTTGCT	TATCTGCTAA	AAAGTTTTTG	ATAGTAGTAA	AGGCTTTCTC	2760
GTGGTAATTA	CGAGCTGCTT	CAAAGATAAA	ACAGTTATTT	TTTTCAGCTG	TTTGAATCAA	2820
ATCAAACCAT	TCTTGTTGGT	GAGAGACAGC	TGGCTTTTCG	AGAATAACAT	GTTTACCAGC	2880
AGACAAGGCA	GCTTTTGCCT	GAGCAAAATG	TAAGGAGTTT	GGACTGGCGA	TATAGACTAA	2940
ATCAAAAGAA	GATTTGAAGA	AGACTTCTAA	TTGATCGAAT	AGTTGGATAT	TCTGATAGCG	3000
AGAAGCAAAG	GTTGCTGCAG	TTTCTAGTTT	TCTAGAATAG	ATTGCGACCA	GTTGGTATTC	3060
TCCACTGGTA	TGGGCTGCTT	CTATGAAATG	ATGGCTGATA	GCGCCAGTTC	CGATGACACC	3120
TAATTTTAGC	ATAAATACTC	CTTTTCCGAT	TTTAAATCCT	TCTTTCATTA	TAACATAGAT	3180
AGACGGGACT	ATCCAACAGA	GAGGAGAAAA	TTTCAAATAA	GCTATTAGCT	TTCTTTTCCG	3240
AATAAATAGA	TAGAAGCATA	GAATCTAGCA	AACCTAGATT	TAAAAATGTG	CTATAATAGA	3300
AGGAGGAAAA	GGAGGATTCT	CAGACATCTA	GGTATCAGCC	CAACTAATGA	TTTGTCAATT	3360
TATCCGCGAT	ATGCTGGACT	TGCCAGCAAA	AAATGTGACG	ATTTTGGAGG	GAAGTAACAT	3420
TCACGTCTTG	CCTTCCATGC	CCTACTCAGC	GTAAGATTTC	TATACTAGTA	TAGACGTCTT	3480
GGCGGAGTTA	GATAATGGAA	TCCAAGTTAT	CATCGAAATT	CAGGTTTCATC	ATCAGAATTT	3540
TTTCATCAAT	CGCCTATGGC	CTTATCTGTG	CAGTCAGGTT	AATCAAAACC	TAGAAAAAAT	3600
TCGCCAACGT	GAAGGTGATA	CCCACCAGAG	CTACAAACAA	ATCGCACTAG	TATACGCTAT	3660
CGCAATTGTC	GATAGTAATT	ACTTCTCAGA	TGACCTAGCT	TTTCATAGTT	TTATAGTAAA	3720
ATGAAATGAG	AACAGGACAA	ATCGATCAGG	ACAGTCAAAT	CGATTTCTAA	CAATGTTTTA	3780
GAAGTATAGG	TCTACTATTG	TAGCTTCAAT	CTACTAGAAA	TTCCATAGAT	AGAAAACTAC	3840
ATAATCTCTA	CAGATACGGA	TGTTGGAGTT	GATGTAAGAT	GCTTTGGCTT	GCTAGAGGAA	3900
TTGTGGATTG	CCAAATTGTA	TCATTGAAAT	TATGCTCAA	ATTTGTTATG	ATATAAATAT	3960
GAATAAAAGT	AGACTAGGAC	GTGGCAGACA	CGGGAAAACG	AGACATGTAT	TATTGGCTTT	4020

1118

GATTGGTATT TTAGCAATTT CTATTTGCCT ATTAGGCGGA TTTATTGCTT TTAAGATCTA	4080
CCAGCAAAAA AGTTTGTAGC AAAAGATTGA ATCGCTCAAA AAAGAGAAAG ATGATCAATT	4140
GAGTGAGGGA AATCAGAAGG AGCATTTCG TCAGGGGCAA GCCGAAGTGA TTGCCTATTA	4200
TCCTCTCCAA GGGGAGAAAG TGATTTCTC TGTTAGGGAG CTGATAAATC AAGATGTTAA	4260
GGACAAGCTA GAAAGTAAGG ACAATCTTGT TTTCTACTAT ACAGAGCAAG AAGAGTCAGG	4320
TTTAAAGGGA GTCGTTAATC GTAATGTGAC CAAACAAATC TATGATTTAG TTGCTTTTAA	4380
GATTGAAGAG ACTGAAAAGA CCAGTCTAGG AAAGGTTTAC TTAACAGAAG ATGGGCAACC	4440
TTTTACACTT GACCAACTGT TTTCAGATGC TAGTAAGGCT AAGGAACAGC TGATAAAAGA	4500
GTTGACCTCC TTCATAGAGG ATAAAAAAT AGAGCAAGAC CAGAGTGAGC AGATTGTAAA	4560
AAACTTCTCT GACCAAGACT TGTCTGCATG GAATTTTGAT TACAAGGATA GTCAGATTAT	4620
CCTTTATCCA AGTCCTGTGG TTGAAAATTT AGAAGAGATA GCCTTGCCAG TATCTGCTTT	4680
CTTTGATGTT ATCCAATCTT CGTACTTACT CGAAAAAGAT GCGGCCTTGT ACCAATCTTA	4740
CTTTGATAAG AAACATCAAA AAGTTGTCGC TCTAACCTTT GATGATGGTC CAAATCCAGC	4800
AACGACCCCG CAGGTATTAG AGACCCTAGC TAAATATGAT ATTACAAGCG GGGT	4854

(2) INFORMATION FOR SEQ ID NO: 179:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2186 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 179:

TAAACAGGTG TTAGGTGCTC TAAACTATTA AAATTCTAAG GAAATAAGGC TACTTTTCT	60
GGGTCTTGTT CATAGTAGGT GTGGTTCTTT TTTTCGAGTG TAGCCCATAG CTTTGAGCGC	120
ATAGTGGATG GTAGTTGGAT GACAGCCAAA TTCAGAAGCT ATTTCACTCA AATAAGCAAC	180
TGGATTGTCA GTAAGATAGT TTTTAAGTCT ATCTCTATCA ACTTTTCTTG GTTTTGTTC	240
TTTACTTGG TGGTTTAGCT CTCCTGTTTT CTCTTTTAGC TTAAACCAGC CATAAATGGT	300
ATTACGTGAG ATTTGGAAAA CGTGTGATGC TTCTGTTATA CTACCTGTTT GCTCACAATA	360
AGAGAGAACT TTTTACGAA AATCTATTGA ATATGCCATA AGAAGATTAT ACCACATTGT	420
GTACTATTTT TGGTTCATTT TACTATATTT CTAAACACTT AGAAATAATA AAACAAATTA	480
AATATTATTT CTAAATATTT GAAAATAACA TCTATTGTA TTATACTATC TTTGAGGTAA	540
CTATTATGAA CTATATCAAA AGACCACATT ATTTAGATTT TTTAAGAAAA CATCGTGACC	600

1119

GACCAATCAT CAAAGTTGTG AGTGGAGTTA GACGAGCTGG TAAATCTGTG CTTTTTCAAC	660
TCTATAAAGA GGAGTTACTA GCAACTGGGG TAGACGAGGA TCAGATTATA TTCATCAATT	720
TCGAAGATTT GAGTTACTAT GATCTGCGAC ATTTTCAAAC ATTATTCGCT TATATAAAG	780
ATCAATTAGT TAGCAAGAAA ACATACTATA TCTTTTGTAGA TGAAATTCAA TATGTTGAAA	840
AATTTGAACT GGTAGCAGAT AGTCTATTCA TCTTAGCAAA TGTAGACCTC TATTTGACTG	900
GATCTAACGC CTACTTTATG AGTAGCCAAT TAGCAACAAA CTTGACTGGT CGGTATGTTG	960
AGATAGAGGT TCTTCCTTTG TCATTTGAAG AATATCTATC AGGTCAATCT CTCACAGAGA	1020
ATCTGAATAC AACAGAAATT TTTAACAATT ATCTCTTTAG TGCTTTCCCT TACTTATTGC	1080
AAACATCATC TTACGATGAA AAAATTGACT ATCTCAGAGG AATATATAAC TCCATACTGT	1140
TAAATGATAT TGCTACTAGA TTGGGAAAAC CAAATCCTAC TATTATTGAG CGCATTGTCC	1200
GAACCCCTCT CAGTAGTACA GGTAGCTTAA TATCAACAAA TAAGATTTCGC AATACCCTAG	1260
TCAGCCAAAA TGTTTCAATA TCCCATAATA CTTTGAAAA TTATTTGACA ACTTTGACAG	1320
ATAGTTTACT TTTTATTCC GTTCCACGTT TTGATGTAAA AGGTAGAGCA TTATTGCAAC	1380
GTTTAGAAAA ATATTATCCC GTTGATTTAG GTTTACGACA TCTCTTATTA CCAGACCAGA	1440
AAGAAGACAT TAGGCATATC TTGGAAAATA TGGTATATTT GGAATTGAGA CGTAGATATT	1500
CACAAGTATA TGTTGGTAAT TTAGATAAGT ATGAGGTTGA TTTTGTGTT GTAAGTGATC	1560
TTGGCCACTA CGCTTATTAT CAGGTCAGTG AAACAACACT TGCTCCAGAA AACTAGAAA	1620
GAGAACTTAG ACCACTAGAA GCCATTAAAG ATCAATTCCT TAAATATCTA TTAACAATGG	1680
ATACGATTCA GCCAACAGCC AATTACAATG GAATCGAGAA GAAAAGCATT ATAGATTGGT	1740
TACTAGAAAA ATAGATAAAT ATAAATCATA CAGCTAATTA GATTGCAAC AGTCTGTTAT	1800
CAATGATTCT ACCCAAATCC TAACAAGATA TAGTGAATTT CGAATACGCT ATATAATACG	1860
GACACTTGAA AATAGAAATT GGGGATGAAA GGGGATCTAT AATTTCTGGA AGTACTATCA	1920
AAAATTAATA TCATAGTCTT ATTAGAGAAT AGCATCAGCC ACTTTCTCAA ATAAGATTAA	1980
ATTGTAACTG AATTATAATG AAAAAGAGAC TGAGCAATCA GTCTTTAAAA TCAGAAAAGC	2040
GCATAGTATC AGGTATTGAA CAACCTTGAT AATATGCGTT TTATTATGGA AATATTTGCT	2100
TCATTTTCTC CTGAAATAGA GCTTTTGCTA TCCTATTTTT CTCTATTTCT AATGATTTAC	2160
TTCAACTTCT TACCTCTTGG GAAAAA	2186

(2) INFORMATION FOR SEQ ID NO: 180:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 3236 base pairs

1120

(B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 180:

GTCACACGTT TGACTTCACG TATTTTCATAA GTATAAACTT TATTTTTATC GGTTAGATAA	60
ATCTTCATGC CATTTTTAGC ATTATCTAAA GGAGAAAATA ACATTTTATT AGCATTATCA	120
ACACCAAAGA TATGGTGACT AGCTAGACTA TAATTTTCCTT CTCCCATTAC TTGCTCGCGT	180
TTCATTGTAC CAGCTCCGTA GAAGAGATTA ACATTATCAA GTCCTTTAAA AATCGGCAAA	240
TTCATTTCCA ATTCAGGAAT TGCAATTCCC CCAATAACTG GTAATTTTGT AGCATCCCAT	300
TGAGAAGTTA GAACAGCTTC CGAAGAGATA GCTTTGACAG AATCAAAGTC AAAATTGCCT	360
TCTGTATCCT GATTTTCTTC TAATTTTCTT TTTGATACCT GGCTAACTTG ATACTTATTG	420
GTATTCCAGA CTATGAAAAT ATTTCGAATT TGAGTATTAA AAATCAAAGC CAGTGACAGT	480
AATATCAGAA ATCCTGCTAG GATATTTGTC AGCAGATTTT TTCGCTTGT TTTCTTTTAA	540
TTATTTTMTT GAGACATTAT GCTTCACCTT CTGTTTCGTT TTCTGTCCCA ACTTCTTCTT	600
TTTCTGCCAC CGCAACCGTT GTGAAAGTCA CTATCTGAGC ATCTTGATCC AGGCGCATT	660
CTTTAACTCC CATAGTTGCA CGTCCCTGTT GTGAAATATT GGCAAGATTG GTTCGAATCA	720
TGACACCTGT ATCAGTGATA ATCATCAAAT CCTCATCCCC TTGAACAGTC ATAAGACCGG	780
CCAGCAAGCC ATTTTTTTCG GTAATTTTAG CTGTCTGCAT TCCCTTACCA CCACGACCTT	840
TTGTTGGGTA TTCAGTAGCG ACTGTACGCT TACCATATCC TTTTCTGTG ATAATAAGAA	900
CCTCATCTTG ATCAGTAATC AAGCTGGCAC CAACAACTGT GTCTCCTTCA CGAAGGTTAA	960
CACCTTTCAC ACCAGTGGCG ATACGGCTCA TACCACGAAC GGCTGATTGA TTAAAGCGAA	1020
CTGCATAACC AACTTGGTA CCAATGATAA TATCCATATC TCCTTCTGCC AACAAGACAT	1080
TGATTAACTC ATCTTCATCC TTAAATTTCA GCGCTTTGAG ACCATTTTGA CGAATATTGG	1140
CAAACCTCCTT AACACTGGTT CTCTTCACAA TACCGTGACG GGTGTAAAG AAGAGATAAG	1200
CATCATCACT GCGATCAGAC TCAACATTGA TAACCGTCTG AATACTTTCTG TCTTCATCCA	1260
ATTTCAAGAG ATTGACTACT GGTAGCCCTT TGGCAGTCCG ACCATACTCA GGAATTTTCA	1320
AACCTTTAAG ACGATAGACA CGTCCCTTGT TTGTGAAGAA GAGCAGATGA TCATGGGTGC	1380
TAGTTGACAC TAACTCACGA ACAAAGTCAT CATCTTTCAC TCCCGTTCCT TGGACACCAC	1440
GACCCCCACG TTTTGTAGCA GTGAACTCGT CCTGATCCAA ACGCTTAATG TAGCCTCTGT	1500
TAGAAAGGGT AATCAAGACA TCCGATTCTT CAATCAAGTC CTCATCCTCG AGACTCAAGA	1560

1121

CCTGTCCAAT CATCAACTCT GTACGGCGCT TATCAGAAAA TTTACGTTTA ACTTCATCCA	1620
ATTTCGTCTTT GATAATTGA GAAACACGTT CAGGCTTAGC AAGAATATCT GCTAAATCCG	1680
CAATCAGAGC CAAGAGGTCA TCATACTCAG ATTGAATCTT ATCGCGTTCC AAACCTGTCA	1740
AACGACGAAG ACGCATATCA AGGATAGCTT GACTTTGACG TTCAGAAAGC TTAAACTTGC	1800
TCATCAACTC AGCTTGAGcT TCCGCATcCG cTTCACTAGC ACGGATGATA CGAATCAyTC	1860
GTCGATATGG TCTAGCGCAA TCAAGAGACC TTCTAAGATA TGAGCGCGCG CTTCGGCTTT	1920
TTCTTATCA AAACGTGTAC GACGAACAAC CACTTCTTTT TGGTGCTCGA TATAAGCATC	1980
CAAAATCTGA CGAAGAGACA AAATTTTCGG TATACCATT TGGATAGCGA GCATATTGAA	2040
ACCAAAATTG GTTTGCATTT GGGTCATTTT GAAGAGGTTA TTGAGAATAA CATTTGGCTGA	2100
GGCGTCGCGC TTGACTTCAA TAACAAATCG AACACCTTCA CGGTTTGACT CATCACGTAC	2160
TGCTGTGATA CCCTCAATGC GTTTTTCCTG AACCAAGCGA ACAATATGCT CATGCACCTT	2220
GGTTTTATTG ACCATGTAAG GAAATTCTGT TACAACGATA CGCTCACGAC CAGTCTTAGT	2280
CGTTTCAATC TCTGTACGAG AACGTAGGAC AATCGAACCT TTACCTGTTT CATAAGCCTT	2340
ATGGATACCT GATTTCCTCA TGACAAGAGC ACCAGTTGGA AAATCTGGTC CAGGCAAGAC	2400
TTCCATCAAG TCCTTGGTAG TCACTTCAGG ATTATCCATG ACCAACTTCA CTGCATCAAT	2460
gGTTTCACCC AGATTATGAG GTGGAATATT GGTGGCCATC CCAACCGCGA TACCAGTTGC	2520
TCCATTAACC AAAAGGTTTG GAAAACGCGC TGGCAAGACC AAGGGTTCCC GTTCATTGGC	2580
ATCATAGTTA TCAACGAAAT CAACTGTATT TTTGTTGATA TCACGAAGCA TTTCCAGAGC	2640
AATCTTGCTC ATACGTGCCT CGGTATAACG TTGAGCGGCA GCACTATCTC CATCCATGGA	2700
ACCAAAATTC CCATGACCAT CTACAAGCAT GTAACGGTAG CTCCACCATT GAGCCATACG	2760
GACCATGGCT TCATAAATAG AGGAATCCCC GTGTGGGTGA TATTTACCCA TGACATCCCC	2820
TGTAATACGA GCAGATTTTT TATGGGGTTT GTCTGGGGTC ACACCCAATT CATTCATTCC	2880
GTAGAGAATG CGACGGTGAA CAGGTTTTTAA GCCATCTCGA ACATCAGGAA GAGCTCGCGC	2940
TACGATAACA CTCATGGCGT AGTCGATAAA ACTTGCCTTC ATCTCCTTTG TCAGATTGAC	3000
ATTCATAAA TTTTATCCT GCATTAATAA ATGCCTCATT TCACAATTAG TAAGTAACAA	3060
CATTATACCA TAAATTCCCA TCTATTTAG CCTCTAAACC ACTAAAACGT TTACATCGAG	3120
AACTATAAGG CATATTCGTG ACAAAGTTTT TTAAGTGA TAGAATGAAG TTGTCTAGGG	3180
AAAACCCCTA ATAGAATAAG GAGATGGTTA nACAATGACT CTGACTAACA CACAAA	3236

(2) INFORMATION FOR SEQ ID NO: 181:

1122

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 8651 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 181:

AGGTCCTGAA GTATTGGAAC AGGAAGGTCA AGAGTTTTTG GAACATTTC AAAAACTCTT	60
GGAGTCAGTT GAAGTAGTAG CCATCTCAGG TAGTCTGCCA GCTGGCCTTC CAGTTGATTA	120
CTATGCGAGC TTGGTAGAAC TTGCTAATCA AGCTGGCAAG CATGTAGTCT TGGACTGCTC	180
AGGTGCAGCA CTTCAGGCTG TTCTTGAATC ACCCCATAAA CCAACAGTCA TCAAACCAA	240
TAATGAAGAA TTGTCTCAGC TTCTTGAAG AGAAGTTTCT GAGGATTGG ATGAATTAAA	300
AGAAGTACTT CAAGAACCTT TGTTTGCAGG GATTGAATGG ATTATCGTTT CACTTGGTGC	360
CAACGGTACT TTTGCCAAAC ATGGTGACAC TTTCTACAAG GTAGATATTC CTAGAATTCA	420
GGTGGTAAAT CCTGTGGAT CTGGAGACTC TACTGTGGCA GGAATTTCTT CAGGACTTCT	480
TCACAAAGAA TCGGATGCAG AATTACTCAT CAAGGCAAAT GTCCTTGGTA TGCTCAATGC	540
TCAAGAAAAA ATGACTGGTC ATGTCAACAT GGCCAACTAT CAAGCTCTAT ATGATCAATT	600
AATAGTAAAA GAGGTATAAA ATGGCTTTAA CAGAACAAA ACGTGTACGC TTAGAAAAAC	660
TTTCTGATGA AAATGGTATC ATCTCAGCTC TTGCATTGA CCAACGTGGT GCTTTGAAAC	720
GCCTCATGGT TAAACACCAA ACAGAAGAAC CAACTGTGGC CCAAATGGAA GAACTTAAAG	780
TCTTGGTAGC AGATGAATTG ACTAAATATG CTTCATCTAT GCTTCTTGAC CCTGAGTATG	840
GACTTCCAGC AACTAAAGCT CTTGATGAAA AAGCTGGTCT TCTCCTTGCT TATGAAAAA	900
CAGGTTATGA CACAACAAGC ACAAACGCT TGCCAGACTG CTTGGATGTT TGGTCTGCAA	960
AACGTATTAA AGAAGAAGGT GCAGATGCAG TTAAATTCTT GCTTTACTAT GATGTAGATA	1020
GCTCAGACGA ACTCAATCAA GAAAAACAAG CCTACATCGA ACGCATCGGT TCTGAGTG/G	1080
TGGCTGAAGA TATCCCATTC TTCCTTGAAA TCCTTGCTTA CGATGAAAAA ATTGCGGATG	1140
CAGGTTCTGT AGAATACGCT AAAGTAAAAC CACACAAAGT TATCGGCGCT ATGAAAGTCT	1200
TTTCAGACCC ACGCTTTAAC ATTGATGTTT TGAAAGTTGA AGTTCCTGTT AACATTAAAT	1260
ATGTTGAAGc KTCGCTGAAG GTGAAGTAGT TTATACACGT GAAGAAGCAG CAGCCTTCTT	1320
CAAAGCGCAA GATGAAGCAA CGAACTTGCC ATACATCTAC TTGAGTGCTG GTGTATCAGC	1380
TAAACTCTTC CAAGATACTC TTGTATTTGC TCATGAATCA GGTGCGAACT TTAACGGAGT	1440
TCTTTGTGGC CGTGCTACAT GGCAGGATC AGTTGAAGCT TACATCAAAG ATGGTGAAGC	1500

1123

AGCAGCTCGC GAATGGtCGC ACAACTGGAT TTGAAAACAT TGACGAACTC AACAAAGTTC	1560
TTCAAAGAAC AGCAACTTCA TGGAAAGAAC GCGTGTAAGA AAGTCCTCCT AGTTTAGGAA	1620
CATGAATCTA AAAAAATTTA AAAAAAGTTG TATGTAAAGG CTTACAAAAT AACTTACTTG	1680
TGCTATACTT AAATCACAAG TTAATATGAA TTAGAAAGTA ACTATATGAA GTATAATAAA	1740
AATAGGATAT AGTTTATTTT ACGAGCTAGG AAGGAAAAAT ACGGAAACAA TATTGCCAGA	1800
ATAAACTATA TTTAGATGCA CATTTTCATTC ATTGTTTTAT AAAAGGAGAA GATAAACGGC	1860
TACTAAAAAG AGTTTTAAAG CGTTAGTTGT AGGACTAGGT ATTGTTTCAA TATTCTTATC	1920
AGCCTTACCT ATGGTTAGTG GTTCTGTATT TGCAGATAGT GCCCTAACTA CAGTAGATAA	1980
AGCAAATGAT ATTGTTTGA ATGTTGATGG GAATAAATTT TATAATGTTT CGGTTTCAGA	2040
AGATATTGTA AATGCTGGTC AAATTTTGA AGATTATTTT TATGTAGATA AATTTGGAAA	2100
TATAAATTTA AAAGGCACTC CTGAAGAGTT AGCAAAAAAT ATTGGTATTT CTGTACAAGA	2160
AGCAAGTTG ATGTATGGAG CTGTAAAAGA GTTACCCAAC GTTTACGAAA GAGGTCCTGT	2220
AGGTTTTCGT TTCAATCTTG GTCCTCAAGT GAGGGGGATG GGTGGCTGGG CTGCTGGAGC	2280
TTTCGCTACT GGATATGCTG GATGGCATT TGAACAATTT GCGGTTAATC CTGTTACATC	2340
TGGATTTGTT GCTGTAATAA GTGGTCCGAT TGGCTGGGCT GTAAAACTG CTGTAGAAAA	2400
TTATTGGACA GTTGCTGTAG CTACAGTAGA AGTGCCGTTT GTGAACCTTG TTTACACCAT	2460
AGATTTACCT TAGAGGTAT TTCTTTATGA ATCATTCTTT TAAAAAATA ACTGTATTTT	2520
GTTTTATAGT TTCTGTGTT CTTTGTATT TAGACTTAAT GAATTTTAAA AATGTAGCTA	2580
CTTTTTTATT TTTCTGTCTT CCTGTTTTG TTTTGATTTA CAAAAATAAA TAAAAACAGA	2640
GCCTCTGTTT GATGAATTTT AGAACATAGT TAAGTTTTAA AAAAAAGTTGT ATGTAAAGGT	2700
TTACAAAATA ACTTACTTGT GCTATACTTA AATCACAAGT TAATACAAGG TGAGTGTAC	2760
TAAGTAATAT TAGGCATGAT CACAGGTGAA TTAGAAATCA GCTGATTTTC TAGTTCATTT	2820
GTGGTCATTT TTTGTACTTA TATACCTTTA AGATATAAAA GGAGGTTGAC ATGTATCGAA	2880
TTCTAAATCC AATGAATCAC AATGTCTCGC TTGTCAGAAA TGATAAGGGA GAAGAGGTGA	2940
TTGTAATTGG TAAGGGAATT GCATTCGGAA AGAAGAAGGG GGATTTGATT GCTGAAAATC	3000
AGGTTGAGAA AATCTTTCGG ATGAAGACCG AAGAGTCCAG AGAAAACTTT ATGGCTCTTC	3060
TCAAAGATGT TCCGCTTGAT TTTATCACAG TGACCTATGA AATCATTGAT AAGCTATCAA	3120
AGAAATATCA TTATCCGATT CAAGAGTATC TCTATGTAAC CTTGACAGAT CATATTTACT	3180
GTCTTATCA AGCTCTAACT CAAGGAAGGT ACAAGGATAG TAATCTGCCA GATATTTCCG	3240

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CTAAGTATCC	TGTCGCTTTT	CAAATCGCAA	ATGAAGCTTT	TGAAATTTAC	CGTCAGAAGC	3300
TAGCAGATCA	TTTTCCTGAG	GACGAAATTA	TTCGGATTGC	TTATCATTTT	ATTAATGCTG	3360
AAGGTGAAAA	TGAAGTGGAA	CTTGTGGAGT	CGATTGATAA	GAGGAAAGAA	ATTCTCAGGA	3420
ATGTTGAAGA	AGTTTTAACG	GACTATGCAA	TTCAACGAAC	TAAAAAGAAT	AACCATTCTT	3480
ATGATCGCTT	TATGATCCAT	TTGAATTATT	TCTTGGATTA	TTTAGACAGA	TCTAGAGATG	3540
ATAACCAATC	ACTTCTGGAT	ATGGAAGATC	ATATTAAACA	ATCCTATCCA	AAAGCCTTCG	3600
AGATTGGTTC	CAAGATCTAT	GATGTGATTA	CGCAACATAC	GGGTCTTGAT	TTGTATAAAA	3660
GTGAACGAGT	TTATCTAGTT	CTACATATCC	AACGTTTATT	GTCATAAAAA	TTTATTTAAA	3720
ACTATATAAG	GAGAATTCTA	TCATGAATAG	AGAAGAAGTA	ACATTGTTAG	GTTTTGAAAT	3780
CGTAGCCTAT	GCTGGCGATG	CTCGTTCAAA	ACTATTGGAA	GCCTTGAAGG	CTGCTGAAGC	3840
TGGTGATTTT	GAAAAAGCGG	ACGCTCTGGT	AGAGGAAGCT	GGTAGCTGTA	TTGCAGAGGC	3900
TCACCACGCG	CAAACAAGTC	TATTGACTAA	GGAAGCTTCA	GGTGAGGACT	TGGCTTATAG	3960
TGTAACCATG	ATGCATGGCC	AAGACCACTT	AATGACAAC	ATCTTGTTAA	AAGATTTGAT	4020
GCATCATTTA	ATTGAACCTT	ACAAGAGAGG	AGTTCAATAA	TGAATAAACT	AATTGCATTT	4080
ATCGAGAAAG	GAAAGCCTTT	CTTTGAAAAA	CTATCTCGTA	ATATCTATCT	TCGTGCTATT	4140
CGTGATGGTT	TCATTGCAGG	TATGCCTGTT	ATTCTCTTCT	CAAGTATCTT	TATCTTGATT	4200
GCCTTTGTAC	CAAACCTCATG	GGGCTTTAAA	TGGTCTGATG	AAGTTGTAGC	CTTTCTGATG	4260
AAACCTTATA	GCTATTCTAT	GGGTATTCTG	GCTCTCTTGG	TAGCTGGTAC	AACAGCTAAG	4320
TCATTGACTG	ACTCAGTAAA	CCGGAGCATG	GAAAAAACCA	ATCAAAATCA	GTATATGTCA	4380
ACATTGTTGG	CAGCAATTGT	TGGTTTGTGG	ATGTTGGCAG	CTGATCCTAT	CGAAAGTGGT	4440
CTAGCTACTG	GATTCTTGGG	GACAAAAGGT	TTGCTTTTCA	CCTTCCTTGC	TGCCTTTGTT	4500
ACTGTAGCCA	TCTATAAGGT	TTGTGTTAAG	AACAACGTCA	CTATTCGTAT	GCCTGACGAA	4560
GTTCCACCAA	ATATCTCACA	AGTCTTTAAA	GATGTGATTC	CATTCACTCT	ATCTGTTGTT	4620
TCTCTTTATG	CTCTTGACTT	ATTAGCACGT	TATTTTGTGG	GTTCTAGTGT	GGCAGAATCA	4680
ATCGGTAAAT	TCTTCGCACC	ACTCTTCTCA	GCAGCAGACG	GATACCTTGG	TATTACCATT	4740
ATCTTTGGTG	CCTTTGCCTT	CTTCTGGTTT	GTTGGGATTC	ATGGTCCATC	TATCGTTGAA	4800
CCAGCTATCG	CAGCTATTAC	CTATGCCAAT	GCCGAAGTTA	ACTTGAACCT	TCTCCAACAA	4860
GGGATGCATG	CAGACAAGAT	TCTTACTTCT	GGTACACAAA	TGTTTATCGT	TACCATGGGT	4920
GGTACAGGTG	CGACATTGGT	CGTTCCATTT	ATGTTTCATG	GGTTGACAAA	ATCGAAACGT	4980
AACCGTGCAA	TCGGACGTGC	TTCAGTAGTT	CCTACCTTCT	TCGGTGTAAG	TGAACCAATC	5040

1125

TTGTTTGGTG CACCTCTTGT TTTGAATCCA ATCTTCTTCA TTCCATTAT CTTTGCTCCA	5100
ATTGCAAACG TATGGATTTT CAAATTCTTT ATTGAACTC TTGGAATGAA CTCATCACT	5160
GCTAATCTAC CATGGACAAC TCCAGCTCCA CTAGGTCTAG TTCTTGGAAC TAACTTCCAA	5220
GTGCTATCAT TCATTCTTGC TGCCCTTCTA ATCGTGGTTG ACGTTGTCAT TTAATATCCA	5280
TTCCCTTAAGG TCTATGATGA ACAAATTCTT GAAGAAGAAC GTTCAGGTAA GTCTAATGAT	5340
GAATTGAAAG AAAAAGTTGC TGCAAACTTC AACACTGCAA AAGCGGATGC TATTCTTGAA	5400
AAAGCGGGTG TCGATGCAGC ACAAATACC ATCACTGAAG AAACAAATGT CCTCGTTCTC	5460
TGTGCAGGTG GAGGAACAAG TGGTCTCCTT GCAAATGCTT TGAATAAGGC AGCAGCAGAA	5520
TACAATGTCC CTGTGAAAGC AGCAGCAGGC GGCTATGGTG CTCACCGTGA AATGTTACCA	5580
GAGTTTGATC TTGTTATCCT TGCCCTCAA GTTGCTTCAA ACTTTGAAGA TATGAAAGCA	5640
GAAACAGATA AGCTCGGTAT TAACTAGCG AAAACAGAAG GCGCTCAATA CATCAAATTA	5700
ACTCGTGATG GAAAAGGTGC TCTTGCATTC GTACAAGCGC AATTCGATTA AGGCTAGAGA	5760
CTCTGAAATA GTCTCCCATC GTTACGGAAA TCGCTATGGC GAATTTCTTA TTATTAATTC	5820
GTCGGTAAAA AGATATCGTT TTTACCTCCT CATGTCACAA TTCGGTGACT TGGTACAAGA	5880
AGTGAGATGG AGAAGGATGG CTCACTGACT CCTCTCCTCT CACTTTTACT TTATTTAAAT	5940
CAAGAAATAG GTGAAAAAAA TGACAAAAAC ACTTCCAAA GACTTTATTT TTGGTGGCGC	6000
AACAGCTGCT TATCAAGCAG AAGGTGCTAC ACATACTGAT GGAAAAGGAC CAGTTGCTTG	6060
GGATAAATAT CTTGAGGATA ACTACTGGTA CACTGCCGAA CCAGCTAGTG ATTTTACAA	6120
TCGATATCCA GTTGACCTCA AGCTAGCAGA AGAGTATGGT GTCAATGGTA TTCGAATTTT	6180
TATTGCTTGG TCACGTATTT TCCCGACTGG TTACGGCCAA GTAAATGCTA AAGGTGTTGA	6240
GTTTTATCAT AATTTATTTG CAGAGTGTCA CAAACGTCAT GTTGAGCCTT TTGTAATCT	6300
TCATCACTTT GACACGCCAG AAGCTCTCCA CTCAAATGGA GACTTCTTAA ACCGTGAAAA	6360
TATCGAACAT TTTGTAGACT ACGCTGCCTT CTGTTTGTAA GAATTTCCAG AAGTAACTA	6420
TTGGACAACC TTTAATGAAA TTGGACCAAT CGGTGATGGT CAATATTGGT TTGGGAAATT	6480
CCCTCCAGGT ATCCAGTACG ACCTTGCCAA AGTCTTTCAA TCACACCACA ATATGATGGT	6540
GTCTCATGCA CGCGCGGTAA AATTGTACAA AGAGAAAGGC TATAAAGGGG AAATTGGTGT	6600
TGTTACGCC CTGCCAACTA AATATCTCT AGATCTGAA AATCCAGCAG ATGTTCTGTC	6660
AGCTGAGTTG GAAGATATCA TCCACAATAA ATTCATCTTA GACGCAACTT ATCTAGGTCG	6720
CTATTCAGCT GAAACCATGG AAGGTGTCAA CCATATCTTA TTAGTCAATG GTGGTAGTTT	6780

1126

GGATCTTCGT GAAGAAGATT TTACAGCATT AGAAGCTGCA AAAGACTTGA ATGATTTCCT	6840
AGGAATCAAC TACTATATGA GTGACTGGAT GGAAGCCTTT GATGGAGAAA CTGAAATTAT	6900
CCATAATGGT AAAGGTGAAA AAGGAAGCTC TAAGTATCAA ATCAAAGGTG TTGGTCGTCG	6960
TGTAGCTCCT GACTATGTAC CACGCACGGA TTGGGATTGG ATTATCTACC CTCAAGGTTT	7020
GTATGACCAA ATCATGCGTG TGAAGAAAGA TTATCCTAAC TACAAGAAGA TTTACATCAC	7080
TGAAAATGGT CTCGGCTATA AAGATGAGTT CGTTGATAAC ACTGTTTACG ATGATGGTCG	7140
TATTGATTAC GTGAAGCAAC ACTTGGAGGT TTTATCTGAT GCGATTGCAG ATGGAGCTAA	7200
TGTAAAAGGT TACTTCATTT GGTCATTAAT GGATGTCTTC TCATGGTCAA ACGGTTATGA	7260
GAAACGTTAT GGTCTCTTCT ACGTAGATTT TGAAACTCAA GAACGTTATC CTAAGAAATC	7320
AGCTCACTGG TACAAGAAAG TAGCGGAAAC TCAGATTATA GACTAGTAGA ATTAGTCATT	7380
AGATATAGAA TTTTAGTGAG TCAAAAAGAT GTTCAAAGAT TTTATCCAAT CTATTTATGA	7440
AAAAAAGTTT ATATTATAAA TTTCGAAAAA TGCTCTCAA TACCGTGTTT GACGAGTGAA	7500
GAATTGAAAA GTCTTGAAAA ATGGTATGTC TCGACTGGTA AAGAATGGAT TTGTCATTCA	7560
GATGATGAGC TGGAAGAATT TAAAAATCTA TTTTAAATT TTATCAATCC TGAAGAATGG	7620
GATACTATCT CTTTGATTCT AGATTTTATG CCGTTTCAAC AATCGTAACC AATTTCTCAA	7680
AAAAGTTAAA TCTTATATTT AGTACTCTGT AAAACTCTTA TCTAATCACG TTGCTTATAC	7740
TCAATGAAAA TCAAAGAGCA ACTTTAAACT AGGAAGCGAG TCGCAGATTT CTCAATGCAT	7800
AGCTTTGAGG AATTGGGCAA AAAGTCTTTG ATATAGAAAA ACGCATAGTA TCAGGTGTTT	7860
CAACACCTGA TACTATGCGT TTTATTGTGG GAAGATTTAC TTTTTTCTT CTGAAATTGA	7920
GTGTGTACCC AGGCTCTTTC AGTTTATTAA GGCTTGATGA CTTTAATGTG TTTAGATAGC	7980
TTAAAAAGGA TTGAATCACT TAGTTTAGAA TCTGAAACAA TAGTATCAAG ATTTGATACA	8040
TTATAAAAAG TATAAAAATC AAACTTATTG AACTTGCTAT GATCTGCGAG TAAATATTTT	8100
TTATTAGAAT TATTTAAAGC GATGCGTTGA GCCTCTCCCT CTTCTCGCT AAAAGTAGCT	8160
AGAGCTCCGT TTTGAATACC ATTACAGCTA ACGAAAGCTT TAGAAAAATTG GAGATTAGAG	8220
AGATTTTGTA GGGTCAATGT ACCAACAAAA GCACCTGTAA TATCGCGATA ATTTCCACCT	8280
ATTAAAATCA AATCTGTTAA TTTTCGTTTC CTTAAAATCA GAAAAACAGG TAGACTGTTG	8340
GTTACGACGC GGATATTGTC AATAGGCAAC TCACGCGCAA AAAACTCTAA TGTTGTTTCT	8400
GGTCCAATGA AAATAGTTTC TCTTCTTCT ACTAGACTGC CTGCAAAATG GGCTATTTCT	8460
TGTTTTTCTG CCGTTTGAGG GGCTTGTTTT TCAATATTTG ATCGCTCATT AGTCAAAAGG	8520
GAGTTGGTTC GAAGTTTTTC AGCTCCACCA TGCACACGAA TCAGCAAATC TTTATCAGCT	8580

1127

AATTCCTGTA AATAGCGCCT TGCAGTCATA TCTGAAACGG CTATTTTCGTC CATAATCTGT 8640
 TTAAGTGTTA T 8651

(2) INFORMATION FOR SEQ ID NO: 182:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 3786 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 182:

AATCTCCAAT CAGTGCCACT TCAGCTACAA AGAAGAGGAG GATAATAACT CCGTTCACAA 60
 GGACAGACAA GAATAATTGA TAGAAGGAGT CGGTTTCACT TGCTTGACTT GGTCTTGTA 120
 TGATWTGGAG ACTGGCAAGC AGAATGATTC CAATGCTAAT CACACACAAG AGGGCTGTAA 180
 ATCGTAGGCT ATCAAAGAAA GCAAAGAAAC TAGCAATAGC AGTGAGGAmG ATTGGAATTG 240
 CCAAGAGTTG ACTATATTGT TGGAGAACCT TGTCTAGCGT CCAGTCCTTT TCCTGGTGG 300
 TAAATCGTCT CACAACGAAA CTACCCAAGA GGAATGAAAA GAAGAAGAGT GTTGTCGCTA 360
 CTAGGATAGA GATGATAGAA AAAAGAGTTA AAGGAGCTAG CTGCTCAGGG AAGCGACTGT 420
 TAATGCTTGC TATATGTCCA TAGTAAGCAT GTTTGATGTG ATAGATACTA AAGAAAAAGG 480
 AAGATGCAGA AAACAGAATG AGCAAGAGAA AGGCTGTGTA ACTGTGTGTG ATACTTGT 540
 CCAACTTACT TGTAGGAGAT TTGATCGCTT CCACTAGCCA AGACCAAAAA TCAAGCACTT 600
 GCTCTTTCCA TTTATCCCTA GATTTTGGAG CTTGGTCGGG GATATAAGGA CTTTCTAAAG 660
 ATTTACTGAT AAGAAGTGGC TCTTTCGTGG TTGCTTTTGT CTGAGGAAGA GCTTCTTGGC 720
 TCTCTTCAGC TATAGTGAAT TTTTCTGTTT CTTTAGAAAG GTCTGGCTCT TCTTCAGTAG 780
 AATTAGATGC CTTCTTTTCT TCTATTTCTG TTCTCGCTTC ACTGTCTTCA GGAGCTTCAA 840
 TTTTCTCTTC TTGCTGGCTT TCCAATTCGA CTTCAGCTTG AGGGACTTCC TCCTCTAACT 900
 GAGTATTTTT TTCAATTGGT GTATCGAGAT CGGCTATCGT TTCTTCAGCC TTGTCTGCAA 960
 CCTCTTGAGC TTGCTCTTCA GGCTTGTTCT TGCTTGTTGT TTTTACAAAA TCATTACTTT 1020
 CAAACCATTC TTGTTTCATG GTAGAACCTC CTTTMTAGTT AGATAAATAT GTTCCATAG 1080
 TAGCAAATGT AAGCGTTTTT GTCAACGCTC GCTTGGTGTG GATATTAGAT CAATATTATC 1140
 ATCAGATCTC GCAATGAGTT GATCCTTGAC ATCGGTTTTT TCAGTTTTGT AAGGGTGTCT 1200
 TAATTCCGTA CCTCTTGATT CAGGCTTTTC TCTGTGAAT TGGAAGATAG AACCATAGTT 1260

1128

GCTTGAGATG	TCCCAGTTAA	TTCGTTGGCT	TTCTTTCTGG	TCTAGGATGA	TTCTGAGATA	1320
ATCTTTGGCA	GTCAAGTTCAA	CCTTGCCATG	GACTTGGATA	TTTTCAAGCGT	GGAAGTGATT	1380
CTCTGTTGAC	TCTAGCTGAC	TATCTGTAAG	AACGTATCA	AAGATATTAA	CGATATTGGG	1440
CGTTGTGAGT	TTACTGTTTT	TGATACGACT	TCCTTCAATT	CGGAGGATAT	AGCTGTTTGT	1500
ATTGAGGGTC	GCATTTTCAA	GGCTAGCATT	TATGATGGTG	GTTTGTCCGC	GATTGGCTGA	1560
GATGTTGATC	CCTTTTAGAG	TTCTCCCTTT	TGGTAGTCGG	AGAATAACTT	CTTCAAAACG	1620
ACTAGAGTAG	CTACTTGCGA	TATGAAGAAT	CCCACCAATT	CCAGAAGAGA	GAAACGGAGT	1680
TTCAAGACAGT	TTCTTATCAG	TGAGACTCAG	AGTCTATCG	TTCTGATTGG	TGATAAGATC	1740
ATGGTGAGCA	GAAAGAGATG	GATGGTAAGA	AATGTGGATT	TGATCATCGA	AAGAGTCTGT	1800
GATGGTGAGC	GTGTGTTGGT	GGAGAGTAAT	TTCTAGGTTT	TCGACTTCCT	TGCCAAAGGT	1860
TAGCTTTTCC	GTACGGCTAT	CATAGACAGG	TTCTTTGGAC	ATGGAAAGTA	GGCTCTTAAT	1920
CCCGTCAGAT	TGGATACCTA	CAAAAAGCAG	GATAAAGCCG	ATAACGGTAG	TCACCACACC	1980
AAAGATGAGA	AATCCTTTTG	TCCATTTACG	CATGCTGATT	ACCTCTCTTT	CCTTTTTTAA	2040
GAACAAATG	TACCAGACGA	ACAATGAGTA	GACCGAAGAA	GCGAGTTGCA	TAGGAAATGC	2100
CAAGTAAAC	TAGCGAAGAA	GCACCGATAG	CCAGTAAACC	AGAACCAAAA	ATCAAGATAA	2160
AGGCTGATTT	GGCTTGGGCG	AGGACAGTGA	AACTTTCAAC	TAAAAATAGG	AATCCGCCGA	2220
TGATACCCAG	TATGGAAACT	GCAAAGAAAG	CCAGAATGAC	AGTCAAAGCG	GCTACAAGAA	2280
TTGCGAACAG	GGTCACGAGG	ATGGCGATTC	CCAGAGGAAT	GCCGATAGGT	GCTGCAAGGA	2340
GGGCTAACAA	GGCGATATGT	AAAATTGTGC	GGTTATTTTT	TTGAGCGGGT	GCTTCATTGA	2400
TTTTTTTATC	GAGAAGATTG	GATAGAACTT	CGTGGGCCGC	TTCTTTGGGA	GTTCCTCAAC	2460
TAGCGATGAG	TTCTTCTTCT	CCTTCGACTC	CAGCATCGTC	AAAGAGCTCT	CTGAAATAGT	2520
CCATGGCTTC	GATACGGTCA	GCTTCAGGTA	GTTTCTTGAG	ATAGAGTTCT	AGCTGAGTCA	2580
GGTATTCAGT	TCTTGTCATG	GCGGATACTC	CCTTCTATGA	TGCCATTGAT	GGTGTCTGTA	2640
TAGAGTGCCC	ATTCATCTTT	TAGGGTCAAG	AGCTGCTCTA	TACCACCGTT	TGTCAAGGAG	2700
TAGTATTTGC	GCATGCGACC	TTGGAATCTT	CTAGAATAGG	TTGTCAGAAA	GCTATTGCCT	2760
TCCAATTTTT	TGAGAATGGG	ATAGAGTGTG	GATTCTTTGA	TATTAGCGAT	CAGCTTAATG	2820
GTTTGGCTAA	TCTCATAACC	ATAAGAATCA	CCCTGCTCCA	GTACAGCCAA	GATGAGAAAT	2880
TCAATCAAGG	CAGAGGATGT	TGGAAAGTAC	ATGGGAAACC	TCCTTTTCTA	ATGTGTAAGA	2940
TTTTTATATA	TAATTTTCTT	ACACATACAT	TGTACATCTA	AAAGAAAGCC	CTGTCAAGAG	3000
AAATGTGTAA	AATTTTTATA	TATAAAAAAC	TTCTAGCTAA	AACTAGAAGT	TTAAAGGATC	3060

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TTATCCGCTC TGTCCACTGT AAAGAGGGCC ACAGTCATCA GGATATCGAT GAGCAAGAGG 3120
 GCAGCTACAG ATGGTACCCA AGAGTGGAAC AGGTCAAAAC TGTAACCAA GAGGGTTGGC 3180
 CCAAAGGCTG CTAGGATATA GCCTCCTGTT TGAGATAGGC CGGACAATTG GGCTGTCTTT 3240
 TCAGGGGCGC TTGTCTTGAG TGAAAAGTTG ACCATGAGAT AAGGGAAGAG GGCAC TGGTT 3300
 GCGGTTC CGA TGAGGAGATG GATGGCAAGC CAGTAAATGA AATTATTGAT TGGGAAAAAG 3360
 AGCATGGAAA TGCCGACCAC ACCAGCTAGT GAAACCAGAG TGAGCATGAG CTGACGGTTG 3420
 CGAGTAGATA AACTGGTTGT CAGGCTTGGG ATGGTCATTG AAAAAGGAAT GCTAATCAGA 3480
 GATAAGATAG AAGTCAGCAA GCCAGCTTCG TGA CTGGATA GACCTGCATG GATAGACATG 3540
 GTAGGTAACC AGGTCATGAC GGTGTAAAAG ATCAAGGATT GAAAACCTGA AAAGATAATA 3600
 ATTGCCCAAA CCTGTTTATT ACGCATGACC TTTATTTGAC TTTTGTGTTT GGTGTTGGA 3660
 GCTAGTCTAT GATTATAGCG GTGATTTGGG AGCCAGACCA AAAAAGTTGC TAGACAGAGT 3720
 AACGTGAGGA GAAGGATAAG TCCTTTCCAA GAACTGGCTT GTGTAATGGG CACAGCTAGA 3780
 TAGGAA 3786

(2) INFORMATION FOR SEQ ID NO: 183:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3054 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 183:

TCAGCTAAAA AACATTGCTA AATTGATTGA AGCTGGTGCT ACACATTCCG ATTCAACTTC 60
 TCACACGGCG ACCACCAAGA ACAAGGTGAG CGTATGGCAA CTGTTAAACT TGCGGAAAAA 120
 ATTGCAGGTA AAAAAGTTGG TTTCTTCTT GATACAAAAG GACCTGAAAT CCGTACAGAA 180
 TTGTTGGAAG GTGAAGCTAA AGAATATTCA TACAAAAC TGGA AAAAAT TCGTGTGCA 240
 ACTAAACAAG GAATCAAATC AACTCGTGAA GTGATTGCGT TGAACGTTGC TGGTGCTCTT 300
 GATATCTATG ATGATGTTGA AGTTGGTCGT CAAGTTTGG TTAGCATG TAACTTGGT 360
 CTTCTGTGTTGTTGCTAAAGA TGATGCAACT CGTGAATTTG AAGTTGAAGT TGAAAACGAT 420
 GGTATCATCG CTAAACAAA AGGTGTGAAC ATCCCTAACA CTAAATTC TTTCCAGCT 480
 CTTGCTGAAC GCGATAACGA CGATATCCGT TTCGGTCTTG AACAAAGGTAT CAACTTCATC 540
 GCAATTTTCAT TCGTACGTAC TGCAAAAGAT GTGAACGAAG TTCGTGCAAT CTGTGAAGAA 600

1130

ACTGGAAACG GACATGTTCA ATTGTTTCGCT AAAATCGAAA ACCAACAAGG TATCGATAAC	660
TTAGATGAAA TCATCGAAGC AGCTGATGGT ATTATGATTG CTCGTGGTGA TATGGGTATC	720
GAAGTACCGT TCGAAATGGT TCCAGTTTAT CAAAAATGA TTATCAAGAA AGTCAATGCT	780
GCAGGTAAAG TTGTTATCAC TGCAACAAAC ATGCTTGAAA CAATGACTGA AAAACCACGT	840
GCAACTCGTT CAGAAGTATC AGATGTATTC AACGCTGTTA TCGACGGAAC TGACGCTACA	900
ATGTTGTCAG GCGAGTCTGC AAACGGTAAA TACCCACTCG AGTCAGTAAC TACAATGGCT	960
ACAATCGACA AGAACGCTCA AGCTCTTCTT AATGAATACG GACGTCTTGA TTCAGATTCA	1020
TTTGAGCGTA ACTCTAAGAC AGAAGTAATG GCTTCTGCTG TTAAAGATGC TACTAGCTCA	1080
ATGGATATCA AATTGGTTGT AACTCTTACT AAGACAGGTC ATACTGCACG TTTGATTTCT	1140
AAATACCGTC CAAATGCTGA CATCTTAGCA TTGACATTTG ACGAATTGAC AGAACGTGGC	1200
TTGATGTTGA ACTGGGGTGT TATCCCAATG TTGACAGATG CTCCATCTTC AACTGACGAT	1260
ATGTTCGAAA TCGCTGAACG TAAAGCGGTA GAAGCAGGTC TCGTTGAGTC AGGCGATGAT	1320
ATCGTTATCG TTGCTGGTGT GCCAGTAGGA GAAGCTGTTT GCACAAACAC AATGCGTATC	1380
CGCACAGTAC GTTAAGAAAA ATATAAAAAC CTATCATATC CAGCTTTAGA GCTTGTGTGA	1440
TAGGCTTTTT GTATAGAGGG TAAGAAATAG GCAAAACTTT CATAATGGAT TGATACTCTT	1500
CGAAAATCTC TTCAAACCAC GTCAGCGTCG CCTTACCGTA TATATGTTAC TgACTTCGTC	1560
AGTTCTATCT ACAACCTCAA AGCAGTGCTT TGAGCAACTG CGGCTAGCTT CCTAGTTTGC	1620
TCTTTGATTT TCATTGAGTA TGAAATAAGA TATGCACAAA TTGATTAGAA AGTCAAATGA	1680
ATTTCTACAA ATGTTTTAGC AATCGTAATG TACTTGTCTA GATTCGATCT GATATATTTT	1740
CGATTTAATG ATATGGTATT TAAAACCTCC AAAGTAGCTT ACTCCATTCT TTTACTTACG	1800
TGAGTGTAGA TGTTATTTAC TGTTTTAGCG TTTTGTGTTT CCACTCTAAC CATTTATAGCA	1860
TTCTTCTCAG CTAGTGTAAT AAGGAGTGTG TGCCTGAAAA TATGGGAACT AAGGGGCTGG	1920
TTTATCGGTT TCTCTAGTTT AGTATTTGCC TTTTGCAAAG TGATCTTAAA TGCCTTTCTC	1980
TAAATTTACA TATCACTATT GTTTAACAAA ATCTAATCTA TTTTAGGTCA CTTATTCTTT	2040
TTTTGAAATG TAGAATGAAC TTTTTCAAAG TTTTTCGAAT CTTTAAAAAT CTGTTTGCTT	2100
TATATCGCCA TTCTCCCCC TTTTTTAATT CTCCCTATAT AGCCTGACAG CTTTCCCGAT	2160
GGTACGAATA TGGTTGCTTT CGTCTAGGTG GATGTCGGGG TATTCGGGAT TGAGTTTTTT	2220
TGAGGCAGCC TTGGCGGAGT TTCTTGACAT AGTTAGTGCC GTCTACTTGG AAGATGCCGA	2280
TGGTATTATA GTCAATCTGT GGGGTATTCT TGATAAATAG GTAGTCGCTG TTTCTTATCT	2340
TTGGCTCCAT GGACTTGCTG ACGACATAAG CGATTGGGTC GTAGTCGTCT GGGATAATGG	2400

1131

AAACTCCATA TCTAAATCGT TGTCCTGCAT CGAGCGGCTA CCTGCAGAGA TAAACTACCT	2460
AACACGAGAG TAAGTAGTCT GTCTGTAGTC GTCCAGTCTG ATGATTTTTA CGATACTTCG	2520
TTTTTCTGAT CATACAGTTG CCTCTCGGCA TAGGTCAGAA CTTTACCTTG TCTGGGTGGT	2580
TCCCGTTGGT CGTAGATAGA TTGGATATCG CTAGGAGAAT CCTTTTGAAC TGGAGGAAAG	2640
AGGGCATCGA TCAAGCTACT GAATACTTTA ACTAAGTCAA ATATAGTATT TTTCTTAGTA	2700
GACCTAACCC TTTTTCATA ATTTCTAATG GTGTTTTTAC TTATACCTAT CTTAGTACCC	2760
AATTCTTATT GAGTCCAACC ATTACTAGTC TATATTGTTT TATAGTTGAT TGAGTTTGGA	2820
ATAGTACGCT GTAGCTGCTA AAACATTTCT AGAAATTAAT TTGACTTTCC TAATAGAGTT	2880
GTTCATATCT TATTTCAATC TATTATGTTT TTCACCTCTA ACAATCGCAA TCTCTTCTTT	2940
ATCCATGAAT GAAATCGCTT TCTATTTTGT TAAGTAAAGC ATAACACGAA ATCCACGAAA	3000
ATGAAAACCT TTGTTGTGTT TTCGTAAAAA ATTTGTTGAC AGAGCACGAA ACGC	3054

(2) INFORMATION FOR SEQ ID NO: 184:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1590 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 184:

TGTGATTTTC yGAAAATTTG GTAAATATA TCTTAATCAT TTTCAGGAGG AAAAAATTT	60
GACAAGATAT CAGAATTTAG TAAATGGAAA ATGGAAATCA TCTGAACAAG AAATTACGAT	120
TTATTCACCA ATCAATCAAG AAGAATTGGG TACAGTTCCA GCCATGACTC AGACTGAAGC	180
TGATGAGGCT ATGCAAGCTG CGCGTGCAGC CCTGCCAGCA TGGCGAGCTT TATCAGCAGT	240
TGAACGTGCG GCTTATTTGC ATAAACAGC AGCTATTTTA GAACGCGATA AGGAAGAAAT	300
TGGTACTATC CTTGCCAAAG AAGTAGCAAA AGGGATTAAA GCAGCAATTG GAGAAGTAGT	360
GCGTACAGCA GACTTGATTG GTTATGCTGC TGAGGAAGGT CTCCGTATCA CTGGACAAGC	420
AATGGAAGGT GGTGGTTTGT AGGCAACAAG TAAAAACAAA CTGGCTGTTG TCCGTCGTGA	480
ACCAGTTGGT ATCGTGCTAG CGATTGCTCC CTTTAATTAT CCAGTTAATT TATCTGCTTC	540
TAAAATTGCA CCTGCCTTGA TTGCAGGGAA TGTGGTCATG TTTAAGCCAC CAACACAAGG	600
TTCCATTCTT GGA CTCTTGT TGGCTAAAGC ATTTGAAGAA GCAGGGATTC CGGCAGGTGT	660
TTTCAACACC ATTACAGGTC GTGGTTCAGA AATTGGGGAT TATATCATTG AGCACAAAGA	720

1132

AGTCAACTTC ATCAACTTTA CAGGTTCAAC TCCTATTGGA GAACGTATTG GTCGTTTAGC	780
TGGTATGCGT CCTATCATGT TGGAACTTGG TGGGAAAGAT GCAGCTCTTG TACTAGAAGA	840
TGCAGATTTG GAACATGCTG CCAAGCAAAT TGTGCGGGA GCCTTTAGCT ACTCAGGACA	900
ACGTTGCACG GCCATTAAAC GTGTCATTGT TCTCGAAAGT GTAGCAGATA AATTAGCTAC	960
TTTGCTTCAG GAAGAAGTTT CTAAATTAAC AGTTGGTGAT CCATTTGACA ATGCTGATAT	1020
TACACCTGTT ATTGACAATG CTTCAGCCGA CTTCAATTGG GGCTTGATTG AGGATGCACA	1080
AGAAAAAGAA GCTCAGGCTC TTACACCAAT CAAACGTGAG GGCAATCTTC TCTGGCCAGT	1140
GCTTTTTGAC CAAGTTACAA AAGATATGAA AGTGGCATGG GAAGAGCCAT TTGGTCCTGT	1200
TTTACCAATC ATTCGTGTGG CTAGTGTAGA GGAAGCTATT GCCTTTGCCA ACGAATCTGA	1260
ATTCGGCCTT CAATCATCAG TCTTTACAAA TGATTTCAAA AAAGCCTTTG AAATTGCTGA	1320
AAACTTGAA GTAGGTACAG TCCACATTAA TAATAAAACC CAGCGTGGTC CAGATAATTT	1380
CCCATTCCCT GGTGTCAAAG GTTCTGGAGC TGGAGTGCAA GGAATTAAAT ATAGCATTGA	1440
AGCGATGACA AATGTCAAAT CCATTGTTTT TGATGTGAAA TAACGTGTAA AACCAGGAAA	1500
TTGTTTTCTT GGTTTATTT TTTTGCTATA AAATAATAAT AATTATAGAA AAAATACGAA	1560
CTTTTGGTA TTATAATAGA TTGAAACCGG	1590

(2) INFORMATION FOR SEQ ID NO: 185:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 4848 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 185:

CCTGCAGTTG TCAGACCTGT AATTTTCTTT TTATCTGTAA TAAGAATCGT TCCAGCGCCT	60
AGAAAACCCA CACCTGATAT AACTTGAGCT CCTAATCGTG TAGGATCTCC TGTCCCAAAT	120
TTATAAGATA CGTATTCATT CGTCATCATA ATCAACATG CAGCTAGACA AACAATACTA	180
TAAGTTCGGA TGCCTGCAGG CTGGGATTTG CTCCCTCTCT CTAAACCAAT TATACTACCA	240
ATGACTACTG ATAAAACAAT CCTGACAACT ATTTCAATAT TTGATAACCC AAGACTAGTG	300
GCTGTCATGA TTATTTCCCT ACTTTACGCC CCGGTCTTTG TGTGAAGTAT AATACCGTTC	360
CAGAAATAAT CATCAGAACA ATTGTATAAA CAAATACCAG AGCTTGTGCA TTAGATGTTG	420
CTGTTTCATC ACCTGCAGAT CGAATCGTAA TACCTAATGG TTGAGCTAGG GGATGGTAAA	480
GGAATACAGA TAAGTCGAAG TCAGTTAATA AAGAGTTAAA GTTTAAAGCA ATAACAGAGA	540

1133

GAACAACCGG TAAATATAAT GGAATGATAA CCTTCATCAT AGTATAAAAA GGTGAAGCAC	600
CCATACTTCT TGCTGCATCT TCCATCTCAT CATCAACACT AAATAAAATA GCACGTACCA	660
TTCTATAAGA AAATGGGATT TTTACAACATA TATATGCAAT AAGTAGAATT ACCAAACTAC	720
CTACCAAAAT CTGATTCAAG ACAAGAAATT GTGGCTGATT AAAAGTAAAT AATAAACTTA	780
CTGCTAAAAG TGTACTTGGT AGTAACCAAG GAAGTAGAGC ACCATATTCA AATAAGAAAT	840
CAAAACGAGA TTTATGTTTT CTGACAACAC GAGCAAATAC AACTGCGAGA ATTGTTGCTG	900
TTGTGCGAGC AATAATAGAA TAAATAAAGC TGACCAAGAA TGGAGAGAAT GCCGCACTAT	960
TACTAAAGAA TAAGCGATAA TTTTCTAAAG TAAAGTTTGA TAATGTTAAG TTACCTGTTT	1020
GAATTGCAAC TGGATCTGTA AATGAGTATA ATACTATAAA AATTAGTGGA AGCATGAAAA	1080
CTGTGAACAA TCCATATGCT ACAATGTGAG CAATGATATT CCAAGGCTTA GACGCAATTT	1140
TTTGTTTTTT AAGAGGCGCT TTAGTCTTAG AGATAGAAAT ATAATTTCCA CCTTTTTCTA	1200
TCTTATTCAT GATAGTAAGC AAAATTGTAG TTGCAATACC TAAATAAAT GCAAGTAGGG	1260
CAGCTAAATC ACGAGAATTC CCCATCCCTG CAAATGTAAT AATCATTGGA TTTATAGTTT	1320
GAAATCTTTT ACCACCAACA ATCATGGGTG CTGCTACTGC AGATAAACCA CTAAGAAAAA	1380
CCATAATAGT AAGTGCAAAT AGAGTTGGAA TTAAGGTTGG TAACACTACT TTTCGGAAAA	1440
CAGTAAATGG TTTTGCTCCC ATATTTGCGAG CAGCCTCAAT AGTGTGATAG TCAACGCTTC	1500
GAATTGTATT TGTTAAAAAC AATGTATGAT TAGCAGTTCC TGAAAAATGTC ATAATGAATA	1560
AGACTGCACC ATACCCAATA AACCAGTTAG GGTCTAAAGA AGGGATAACA TTTTGTAATA	1620
ATTTTGTAAT CAATCCATAA GGACCATAGA CAAATTTATA TCCAGTCGCT AAAACCACTC	1680
CTCCATAAAT TAAAGAGGTC ATATAACCTA ATTTTAAAA TTTAGCACCT TTAATATCAA	1740
AGTACTCTGT AAATAGAACA CAAAGAATAC CTACGACATT AACTGTAATA ATGAGTGAAA	1800
ATGCTAACTT AAAACTGTTC ATAATACTCT GAAGTGCCCT CTGAGATTTT AGAACACGAT	1860
GTACAGCATC AAGGGAAAA TCTCCTCCTT TTACAAATAC ATTCACTACT AGATCAAAGT	1920
TTGGATAAAT AATAAATGTT ACTAAGAACC AGATTAAACC TAAACGAATA AGCCAATCTT	1980
TTAAATTTAA TTTATGACGC ATACTGCACC TCCTTAAAT TGCAGAACGT CTGATGGTGT	2040
GATAAATAAT TCCACACTTT CTCCGACAGA TCTAATAGCA GCCTGACTAT CAATACTTGT	2100
TACATTAAGA ATCTGACTTT CAGAACTTT TATTGTATAG TGAATTGTAA CTCCAGAAAA	2160
CTCAACATCA ATAATTGTCC CTTTGTAGAT AAAATCTTGT TCAGTTTCAC GATTGAATCG	2220
AACTTCTCT AATCGAATGT ATCCTTTTTT ATCCTCTAAG AAAACGCTTG TATTTTTCAA	2280

1134

TAATACTTCG TGGACTGTTT CATCGGTCAA AACATTAATA TCTCCAATAA AATCACATAC	2340
AAATTCAGTT TGAGAATTAT GATAAATCTC TACTGGTGTA CCGACCTGTT CGATGTATCC	2400
ATTGTTAAAG ACTGCAATTC TATCAGATAA AGTCAAGGCT TCCTCTTGAT CATGAGTAAC	2460
ATATAAAGTA GTAATACCTA ACTCTTTTTG AAGTCTTTTC AACTCTTTTC TCAAATCTAC	2520
ACGTAATTTT GCGTCAAGGT TTGACAATGG TTCATCTAGA CAAAGAATTT TAGGTTCAAG	2580
AACCAGAGCA CGAGCCAATG CTACCCTTTG TTGTTGACCC CCAGATAATT CTGATACATT	2640
ACGCTGTAAC TGTTGATCAG AGATCTTAAT TTTTGCTGCC ACTGCTGATA CTTTAGCTTT	2700
AATAACATCT GGAGCTACCT TCTTAACTTT TAAACCAAAT GCAATATTAT CAAAAACAGT	2760
CATAGTTGGA AATAGCGCAT AAGATTGAAA TACAATACCA ATTCCACGCT TTTCAGGTTT	2820
CAAATGAGTG ACATCTGTTT CATTAACCTT AATACTTCCT GATGATGGAT CTAGAAAACC	2880
TACCAATGCT CTCAAAGTAG TTGATTTACC ACATCCTGAA GGCCCAAGAA ATGTAAAAAA	2940
TTCCCCCTCA TGTATATCTA AATTCAGATT ATCAATTGCA ACAAATCAC CATATTTAAT	3000
TTGAATATTA TCAAATTTAA TCATCTCACT AACTCCCTCT ATTACTAAAC CAAAAGCCTC	3060
TCTTTATTTT TTCCATAAAT TTAGAAATAA TAGAGAGACT TGGACATAAA AATTAACCTT	3120
TATTTCTTAT TGTACGTATT CTAATTCAGC TTTTCTTACC CATTCATCCA AATGCTTTCC	3180
AACAGCTTCC CAGTCAATAT TTTGTGGTTT CACTTGATCA ACAAATTTCT TCGTATCTTC	3240
AGGTAGATCT TTGAGGGCAT CTTTATTTGC AGGAATAGAT CCAAAGTTCT TACTATATTC	3300
TACTTGAATT TCTGATTGAC CAAACCAATC AATAAATTCT TTAGCTAACG CTTGTTTTTT	3360
ACTAGTGCTT AAAACCATAG TTTGTTTCAGT TACAAATGGT ACACCAATCT CAGGAGTCAT	3420
AACTTTGAAA ACAACATTTT GTTCTTTTTG TCCAATAAT GCACCAGAAC CCCACATCAT	3480
TCCATATTGT ATTGGATCTT CTTTGTCTAA CATCTTAACA ATTGAACTTT CTCCCTTTTG	3540
AAGAGTGAT GCATTTTTCA AATATTCTTT TGCTACTTCC CAACCTTTTT CGGAAACACC	3600
TAATTCACCT TTATCATCAA GGTATCGAAC TAAGATACTT GCTAGAATTG CCCGTCTGT	3660
ACCTCCTTGA AGACCAGAAA TTGAATATTT ACCTTTATAC TTACTACCTA ATTCAGTCCA	3720
ATCTTTAGGC ATTTCTTTTA CATCAGGCGC CCCAATTAAA ACTAATGGTT GAACAATCAC	3780
AGGATTATAA TAATTATCTT TATCTGATAA AGATTGATCA ATTTTATCTA ACCATTTAGG	3840
CTTGTAAGT ACTAGTAATT TTTGATCTCT AATTTTATTT GAATCAACAG CACCAATTCC	3900
AAATACCATA TCTGCAACTG CATTATTCTT CTCAGCAATA ACACGGTCTG CTAATTGAGC	3960
GCCAGCGATA TCAACCATT TATATTTAAA ACCAGCTTCT TTTGCTTTAG CAGTTAACCA	4020
ATCACCACGA CCATTTGAGA CTGAGTTCGA ATAGATAACT AATCTTGAC TTTTATCAGC	4080

1135

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TTTTTCTTCA GATGAAGAAG CAGTCGTAGA ATTTGAACCT CCAGAGCAAG CAGCAAGTGT      4140
AGTAAGAGCA ACTCCCGTTG CAAGTACAGT AGACCAAACCT TTCATTTTTT TCATGATAAG      4200
TTCCTCTTTT TTATTATTTT ATTTAAATTT TTCGTGATAT GGAACAAATT GTCTCATATC      4260
TTCAAATACA GTATAGTCAA TACGGTTTAC AGTAATAGTT GGAATCTTCT CTAATAAAAT      4320
TTCAGTTAAT TCTGCTCTGA CTTTAGTAAA CTCTTCTTCC TCCTCTTCGG TTAGAGGAAT      4380
CCGAAGATAC CCAATTGAAA TATGGAATTG ATATCTATCA TGATTAGGGA AACAAACACC      4440
TGCTTTTTCT GAGACATAAG TACGAATTTC TTCTAATCTC TTTGCAGAAG CTTCATCTGC      4500
AGGTTCAACT AGTATGTTT GTTTCCCAT TTCAGTTATA CGCATATGAA TTTCTTCATC      4560
CAACAATGGA AAAATTTCAA GTTGTTTAGC AAAGTAATCA TGTATTTCTT GTAAAGGTGT      4620
ATCTAGAGGA AGATTACTGC TCCAAACTC gTCCAGGATT TTCATGGCAC AACAAATCAA      4680
TTACAGTCAT GTGAATAGAA TTCCTTGAG TTAAGTAAA CTTATCGATA AATGGTAATT      4740
CTCTATAACG TGATTGAATA ATATCAACAA CTTCATCAA ATCTTGTTTA GTATAAGAT      4800
TTGCTACAAC TGTATTCCCA GGGAAATGAT TAAATCCCC ATTCTCGG      4848

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(2) INFORMATION FOR SEQ ID NO: 186:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3763 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 186:

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GTTATAAGCA ACACCTTCTT GCTTGCCATA AGTTGTGAAA TGGGTAGAAT CGATATCTAC      60
AATGAGTTGG TTTAGCTGGT GAAACTGTAA AAAGAATTCG ACCAATTCAA GGTGAGGCA      120
TCGCAAACTA TGGACTGTTT CCTCGTCAGT TCTGGAAAGA AAACGGGATA AGGTTGGCTG      180
TGAAGCAAGC TGCCCTCCTT CCAATAATTT TGGAAAGTAG GCATCAGCTG ACAATTCTTT      240
ACAAGCATAG TCCGTTCCAT AACCTGTTAA CAGTTGAAAG AGGAACTGGA CAAGGATATC      300
TGAATCCGAA TAACGACAGT AGCGGCGTTG GTCATTCTGT ACTAAATACT TAGAAATCCG      360
CTCTTTTAGT TTCAACTGGG AAAAAAGTTC CTGAAAAAAG ATAAGACCAC CATACTGGGT      420
TAAATGACCT CCATCGAAAG ATAGTTGGTA AAAAGACTTG TTTTGAAGT GATGATTTGG      480
TAAACTGTTT ATGTGAGTTT CCTTCTTTT TGTGTTTTT TCTACACTTA TACCATAAAG      540
GGGAAACTCT TTTTGTCTA GTAAAAACA CCCATTGGGT GAAAAAGAA ACCATCCAGG      600

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1136

ATCTAAGCTA AGGCAAGGAT TCTGGATGGT TTTTAGATTT GGGGTGAATA ATTGGGGATT	660
TAGGAGAAAT GATGGTATCT TCCAAATCAA AATCAACTTC ACTCCATAGT CTCAACTGAT	720
TGATTTTCCC ATCTTGATAG GTCACATCCT TGTCAAGGAT AAACGAGTC AACACCTCAT	780
GTTGACCTTG ACACCTGATG TCATCTACCA AGAGCCAGAC ATCCTCTACC AACATGAGGA	840
TTTTTCTCCT GTGAAGATAA GGCAAATCAG GTTCTGCTGA CCAATAAGCC CCCTCAATAT	900
AATGCACTCC CTCCCTTTCT TTATGGTGAC AAAACAGGGA GTGAGGATAG TATTCATATT	960
CCCAGGATCC CGTGATTCTT TCCGGAGCTT TCCCATCTAC AATGCAGGTC GAATGACTCC	1020
AAGCACTCTT TAAGAGATAA CGTTCATATA TCTCCCGATA AGAATAACGC CCAGCATCTA	1080
TGAAAATAGG TTGGCCTTGA TACTGTAAGC AAAAATCTAT CTCGTCACCTA TGACTATGGG	1140
CACCTCCTAG CGGACCATTT TTGAAAAATA GATAACGATG TTCATCCTTA ATGCAGACAT	1200
GTCCAGAGTC TTCAAAGATC ATGGACTTAG GCTGCCAAGC TCTCTTTTCA AATTCCTGCA	1260
GTCGCTTGAC CTTTTCTCGC CCCAGGAACA AGAGGCTAAG CAAATCAACT TTAACATCCA	1320
GACCGTTAAG AAGGTCTTCC TGGTTCAAAA CCACAGCAGA CAGGCTCAAA ATTTCTGTGC	1380
TTTCTGTAGA ATCGCTATCA CCAAAAAGCCA AAGTCCGTCC ATCTAAGCCT GTCATCATTT	1440
GAATATAGGT CGCCATCTTT TCCAGCAACT CTTGGTAACT ATCTTGCAAG TCTGGAAGCA	1500
AGAGACACAA ATCCAGCAAG GCTTTATAAA CCTCTACATG ATAGAGAATC GACTGTTCAA	1560
ACTGGCTTCC ATCTCTTAAA ATCTGTGTCT CAATTGCTG TTTCAACTCC TCTGAAGCAA	1620
AATGGTAAGC TTCTTCTAGA TCCATCTTAT CTGAAAAGAA ATGATAGATA GCAAGCATCG	1680
GAATTGTTTG TAAAATCCCC CAGTTACTAA GGGTGTACTT GGCGCGATAG TAGCTTTTCA	1740
TAAAGTCAAT CTGCTTTTCT AGACTGACCA AAATTTTCTC TAGTTCTTTC TCCTCTAGCA	1800
AGTCAAATTT CAAGAGGAGC AAGAGTAGTT TCAACCAAGT AAAGGAACGA ATACCCGTAT	1860
CCAAGGTCTT AGTCATCAAG GATTGAGGAG AAAATTCTCT CACCTGCTCA ATCCAATCAA	1920
ATAGAAAGAA CTTGCACTTT TGAATATAGT CCTTATCTCC TTCTACCAGA TACCCATCA	1980
TAAACTGCAA GAGATATTCT TGTCGATTGA GCATATAAGA CCATTCTGGA TCATCTTCAA	2040
ATACTTGATC CCATACCATC GGCTGGATTT GATGGATTTT TGAACAAGGC TCCATATCCC	2100
AAGGACTATC AAACATAAAA CGATTGTCCA TCAAGCGTTC AAGGGAAGTC TTGACTTTCT	2160
CATAGTCTTT TGAACAGTGC GACAAGATAT AATCACGACA TTGATTTCCA TCGACTCTTT	2220
CAAAAAATTG TCTTCTTTCT TCTTTCATTA TCTATTACCA GAAAAAGAAC TACTTAAAAA	2280
GCAGTTCTTT TGTCTTTCCC ATTACACTTT CCTTTTCTAC ATGGATGACC ACACCTTTTG	2340
CAATCTGCAA GGAGACCAAG TCATCTTGGA TAGAAATGAT TTTTCCATGA ATTCCAGACA	2400

1137

ATAACAACAC TTCATCACCA AATGTTAAAG AAGCTAAATA CTCTTGTCGT TGCTCCATCT	2460
GTTTGCGAAG CAACTTTTGC TGACGAATAG AATGAAAGCT TGACAGTAAA AGGGGACTCA	2520
CTGCCAAGAC AATCACTATT CCATAAAACA ATGTTGTATC CATTAAAGCTA TAATCTTAAG	2580
CCAGCTTCCG ATAATTCCGA TGATAACTGT TAAAATAACG AGTTTATATG TTGTCCATTT	2640
CTTTTCTTTG ATCAAGTAGT AAATAAAAG TGTAAATAGG GCTGGTAGAA GAGCTGGAGC	2700
AACCTTATCA AGCATTCCCT GAATACTTAC GATACTTGT TTAGCGTCTG CTTTAACTTC	2760
CCCTGCAGCA AAGGTAATCG GCACCATAAT CTTAACAGAT GTCGCTGCCA AACCAGCAAT	2820
TACGLTACAC CGATAATATT GGCAATACGA GAAATCGTTG CCATCTGTTC GCTTAGTTTA	2880
TCAATCACAG TTGTTCCCTAG TTTGTATCCA TACAGACCAG TTGACAATTT AATCGCTGTT	2940
AAAATCGTAT TCATCGCAAG GAAGAACAAG ATTGGACCGA CAACCAAGCC TTCTTGAGCA	3000
AACGAAGCTG CGATGGTTGA GAACAATGGA GCTAAACAGA ATTGAGAAAAG AGAATCCCCA	3060
ATACCTGCCA ATGGTCCCCT CAAGGCCATC TTGATGCTAC GTGTTTCTTT TGCCGGACGG	3120
CCATTTTCCA ACATTACAAG ATGCAAGCTG GTAATAAAAG GCAGGAAGTG TGGGTTGGTA	3180
TTATAGAATT CACAGTTTTC TTCCAAGGCT TGGTAGAAAC CTTCTGTATC CTCTCCATAG	3240
TGTTTTTTCA AAGCAGGATA CATCACATTG GCATATCCCA ACCCTTGATA GTTACTATAG	3300
TTAAATCCAT TTTGACAAAA GAATGCCCGC AAAGACGTTT TAAGATAATC ACGTTTGT	3360
AATTTGTTAG ATCCAGTCAT CGTGTGCTTC CTCCTTACC ACATGATCCG CTGTTTGG	3420
CTTGTTATAA AATTCAATCA AAGCAAAGAT AGTACCTACA ATTGCAATAC CAATGTTGG	3480
GATGTTTAGA TAAGCTGCAC AAACATATCC CAACAAGACA AAGGGAATCA ACTCTTCTT	3540
AGCCATCACT GACAAGATCA TCGCAAAACC GATAGCTGGG AGCATTTTAC CAGCAACTGT	3600
CAAACCTGTA AGTAATACCG GTGGAATGTA GTCTACGAGT TTCAACAAGG TATCCATTGA	3660
AAGGGCACCA AGCAACCCAA GGTAAATCCA ATAAAGGCAA ACAACCAAAT TGTGTCATTT	3720
AGAGTGAAC TAAATTTCTT CAAATTATGG TTTTCAAGT GCT	3763

(2) INFORMATION FOR SEQ ID NO: 187:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 5053 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 187:

1138

CAATCTCTGA GTATGTGCGG TCAATACTAW CAAAGGGAAT yCCTGACGTC AAGTAATGTT	60
CAATTGGmCT ATAGGTAATG GCAACCACTC CATCAACTTT ATTATGACGC AACATCTCCA	120
GATAGTCTTG CTCTCTATTT GTACCATTGA TAGAACATAA GAGTAATTTG TTATTTCTCT	180
TATAGACTTC ATTTTCCACA TGCATAGCAA ATTCTGAAAA GAAGGGATGC CAGATACTTG	240
GTACAATGAT TGCAATCGTT TCTGTTCGAT TTTTTTTCAT TCCTCTAGCG TAGTAATCTG	300
GAATGTAATT CAAAGTTTAA ATCGCTTGTT CCACTTTTTT CAAAGTTACT TCTTTAATGC	360
CTTTTCTTTT ATTAATTACA CGTGAAACAG TTCCAACACT AACTCCTGCT TCTAAAGCAA	420
CATCTTTCAT GGTAATTGAT TTTCTTTGTT CTACCATATT ATCACCTCCT TTCAATATAT	480
AGTATCATGC AAATGCTTTT TAAGCAACTA TTTCTCAATC ATTTTTGGCC AGATCATTTA	540
TCCCATCATG AATAAAATCA CTCCAATTAG CTTTGTAAAA TACTTCAATT TTCATGTGTA	600
AACATCTACA TAAAACAGGA AAAGCCTTGG TTTTCATGGCT TTTTTCGTAT CTTCTATAAA	660
AAAAGCAAGA GTTTTAGATG GCTATAAATC TAGATGTACA TTTTGCTTAA ATGATTGAAG	720
GTCTTTTCTT AACAAAAACA CCCCCAAAAT TAGACTTTTT CTGCTCTAACT TTTGAGGTAC	780
AGTTCAAACG CGAAATAGCG TTTTMTTGTT ATTTTGGTT ACTCATCTAA TCGAATAAAC	840
ATCATGGCAT TTAACAAGTA TATGAGTGAG ACCGTGTTTA TATTATTGA ATAGATGAGT	900
CTCTTATTTT CAATAGGAGG AATAATAAAA TTAGAAATAA TGATATCATA AGGTGAATCT	960
TCTAAAGATT CCTTTGATAA TTCTAATTCA GTCCAAACTT CCAGTTCAAA ATTATTGCTA	1020
CAATAATAAG AAAGTGCTC TGCAACGAAT TTTGCATGAT ACTGATCAAA ATTACTCATA	1080
ACTAAAACCT TTAGTTTAGG CTGATTTTGT AGCAAATTA TCACCAAATG TTTGGTATGA	1140
GTGATGAAGG TATAAGATAG ATGATTTACC ATCATTGAAC TAGAACAAAC CTCAAGAGTC	1200
TCTAAATAGT GAGAAAGCTC TTTTTTTATA TCTGAAACAA ATTTTGAAA AATATTTTGA	1260
AAGTTCCTGA TTGTATTCCC TTTTGTATCA AATAAAATAA ACTCAGTAAA CAACTCTTGA	1320
CGATACAGAT GTGCGGTATT ATGCAGATGC CAAATCAGAT TATCCTTATT CTCCATTTCA	1380
ATCTGATACT TGAAGTAAAT CTGATCAATA AAATCACTCA ATAGATGGTA AGATTTTTC	1440
ACATAACTAT CCTTTTTTAC GCATTTTATA AAGAGACTTT CATCTATGAA AAACATTTT	1500
TGAAAGTAAG ACACAAATAA TTGGCAAACA ACTTCTTCAT CTAAAGAGAT ATTGTATTCT	1560
GATTCAAAAC TCTGAGCAAC ACCTTCTATT CCTTCTGCCT GCATTAAAAA ATCCAAACTT	1620
TGGTCGTAA AAGAATCTTT ATCTACTTCC ATAAAATGAC CAACTTTAT TCTATATAGG	1680
TTTCGTAAC TAAGCAACTT TAGCATTCTA TGCGTTGACA AATTCATTGG AAAGCTTGTT	1740
TCCTTATAAA CCAATTCTAA CAATTGAGAT AGTGGCTCTG ATGAAAAATT TTCAAATGGC	1800

1139

CATTCTAGGA AATAATATTT TTCTGAAAAA TATTGTGCAA AAAAGTAACG AATGTCTCTC	1860
TCATTTCCAA TGATTTGAAC AGGGGTGAGA CTAACCTCAA ATTGAAATTG CCTTTTAATC	1920
ACTTTATGTA TTTGGCTAAT AATACGATAG AGCGAAGATG AACTGATATA AAATTCCTTTA	1980
CAAATACTCT CAGCTTGACA ACCTTCATTA AAGAAGATGA ATTCTAAAAT CGAAAAATGA	2040
GTTGAATGTT TAAAGAAATG ATGGTAAACC ATTTCAATAT CACTATCATC GGTATTAATA	2100
ATGCGTATAC CATTAGTAGA AGAATGAAAA ATCAAGTCAG GAAAAGCAGA TTAAACATGG	2160
GATAGATCAT CTTTGACTGC ACGTTCCTGTA CAATTTAATA ACTCTGCTAG TTCAGAACGA	2220
TGAAACCAAC GTTTATGTTT AAATAATAAT TCTAATAATT CTAATTGCCT ATGACTTTTTT	2280
TTAGATAATA AATCTCTCAT GAATATCTTT CTCTCTTTAT AAATTATCGG ATTAAACCTC	2340
TTGCAATTAT ACCACAAAGA ATAGGTATAG CATGATATAA CGACTTTTCC TAAATCTTTT	2400
TATTTCTGAT AATAACACTA CGGAGACAAT ATATAACAA TTTTCTTATT TTACCGTCTA	2460
TTGAGGGCGT GAATACAGAA TCAAAATCAA GTCTAAAGAT TATATTTTTA ATTTTAAAAA	2520
TTATATAATA GCAACAATTA AAGAATTGTA TTTTTTAAAA TTATATAATA ATAACAATCG	2580
AAATAATTGA CTTTTCTATA TTAAAGTTAT ATAATAGTAA TAATCAAAGA AATTGATTTT	2640
TTGATATTAA AATAAAAAAG GAGGGTAGGC AGTGTGTGA TCAATTATTG CTGGAGGTCT	2700
TATTGGTCTC TTGGCAGGTA AAATCACTAA AAAAGTAGTT CTATGGGAAT CATCGCAAAT	2760
GTATTCGCTG GTTTAGTCGG GGCATATGCA GGACAATCTC TTTTAGGTAG TTGGGGTCCA	2820
GCAATCGCTG GAATGGCTTT GCTCCCATCT ATTGTAGGTG CAGCGATTGT GATTACTGTA	2880
GTGTCATTCT TTACAGGTAG AAAGTAAACT TTTCGCCAGT AAAGTTAGCA AACTATTTTT	2940
AAATCAATGA CGGGAAAAAT AGTTTAAATG TTAAATCGAA AGGATTGTAT ATGTCAAAAG	3000
CAAAGAAAAT ATGTTTCATT ATTTTCTGTA TTTTAATCTT GACAATTTTC CTCCTGTTT	3060
TGATAGATTA TCATCAAGTT AGTGATCTAG GTATTCATCT ACTTAGCTGG AGACAGAACT	3120
CCGTAGTTGA ATTCTATCTT GCTAGATATG TCTTTTGGGG GACAGTGGTT CTATCAACTT	3180
TAGTTTATT ATCCATTTTA GTTGTGATGT TTTATCCTAA ACGTTACTTG GAAATCCAAC	3240
TTGAACTAA AAACGATACA TTAAAATTAA AGAATTCGGC AATCGAAGGT TTTGTTAGAA	3300
GTTTGGTGAG TGATCATAGA TTGATCAAGA ACCCAACTGT TCATGTAAAT TTACGAAAAA	3360
ATAAATGTTT CGTTCATGTA GAAGGTAAAA TTCCTCCTTC AGACAACATC GCTGACAGAT	3420
GCCAAATAAT TCAAAATGAA ATAACATAATG GATTGAAGCA GTTTTTTGGT ATTGAGCGTC	3480
AAGTAAACT TGAAGTTGCA GTAAAAAATT ACCAACCAAA ACCTCAAAAC AAAAAGACTG	3540

1140

TTAGTCGTGT GAAGTAAGGA ACTAAAAAAT GGAATGGCTT AAACAATATC GATATCCAAT	3600
TATCGCTGGT CTCATAGGCG TATTTCTGGC TTGTTTGATT GTCTCCTTTG GCTTCTTCAA	3660
AACAATATTT GTATTGATTT TAGGAGCACT GGGAGTTGCA GCTGGATTAT ATATCGAAAA	3720
AACTATATA GATAAATAAA AAAATAAAAA TTAATAATTT AATTAAAGGA GTTTCATATG	3780
TCAAACGAAA AAAACACAAA CACTAACGTA GAAAAGAAAG ATGCTACTGT TGTAGCTCAC	3840
GAAATCAAAG GGGAACTTAC TTACGAAGAT AAAGTTATCC AAAAAATCAT TGGTCTTTCA	3900
CTAGAAAACG TTTCAGGTCT TTTGGGAATC GATGGTGTT TCTTCTCAA TCTTAAAGAA	3960
AAAATCGTTA ACAGCGATGA CGTAACAAGT GGTGTTAACG TAGAAGTTGG TAAACACAA	4020
GTTGCAGTTG ACTTAAACGT TATTGTTGAG TACCAAAAA ATGTTCAGC TTTATATTCA	4080
GAAATCAGAG AAATCGTATC TTCAGAAGTT GCTAAAATGA CTGACTTGA AATTGTTGAA	4140
ATCAACGTAA ACGTTGTCGA CATCAAACT AAAGAACAGC ATGAAGCAGA CTCAGTAAGC	4200
CTTCAAGATC GCGTATCTGA CGTTGCTGAA TCAACAGGAG AATTCAC TTC AGAACAATTC	4260
GAAAAAGCTA AATCTGGTCT TGGATCTGGT TTCTCAACTG TTCAAGAAAA AGTTAGCGAA	4320
GGTGTAGAAG CTGTTAAAGG TGCAGCAAAT GGTGTAGTAT CTCACGAAAA CACTCGTGTA	4380
AACTAAGATA AAATAAATAT AACAGGAGAA ATTATCATGT CAGTAGAAGA AAAATTAAAT	4440
CAAGCTAAAG GTTCTATTAA AGAAGGTGTT GGGAAAGCCA TCGGTGATGA AAAAAATGGAA	4500
AAAGAAGGTG CAGCTGAAAA AGTTGTTTCT AAAGTAAAG AAGTTGCCGA AGACGCTAAA	4560
GACCGTGTAG AAGGTGCTGT AGAAGGTGTT AAAACATGT TGAGTGGCGA CGATAAATAA	4620
GGTAAAAAGT TACTTTATCT TTTTAGTAAT ATTAGTCAA AGAGTCTGAG TCAAGATGAT	4680
TCTCAGAAAA CAAAAAGCTA GAGATTCCCA ATTGCGGAAC TCTAGCTTTT TAATTTTGCC	4740
TCTTTCTCTT ATTATATTTT AGCAGGTTGT TGGCCATGAG TACGAATCCC ATGTCAATTC	4800
TCACCTGACG CTTACCTCTC AGATGACATC TCTTATAACC CAAACAAACC TTTATCTGCC	4860
CAAAGACAGA TTTCATATCA ATCTTACGTT TAGCGAAAAT TTGTCTACCC TTGGAAGATA	4920
AAAGTGCCTG ATATTCTTTA GTTTTAAAC ACTGGTAACG TTCATTATA TACAGTCTCT	4980
TTTGAGGGGC TGATTAGGT TCATAATCGC AGTCAACATT GATTCAAGG CTGTTTGCTT	5040
TCTATCTCCC CGG	5053

(2) INFORMATION FOR SEQ ID NO: 188:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 6492 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

1141

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 188:

AATTCCTCTT TTTCCAACAA AATGTATGAC CTGCACTTGA ATACTTCTCA TTGTTTGTAC	60
ATTCATCTAC TTTCATATAA TCTTTTACAA AATCATAATA TGACATAACA CACTATCCCT	120
TTTAGACAAT ATTCCAATTA GCCTTATTAA TTCAAACTA TTGTATTAGT AATTATAACA	180
GATGTATAAT AGAAAAGCAA TGATAGATAT TATCAATTAA GCGAATTTAT ATCTAAAAGG	240
GATATTAAAG AAAGGAGATA TGCTTATGAA GATTTACAAA AAACATTTTG CTTATGTCCA	300
AGATAAGAAA TATCTTGGGG TTTTGGCCAT AATTTTTTCT GCTATATCTG CTGCACTTAC	360
AGTATATGGA TATTATTTAA TCTACAAATT TCTAGATAAG TTAATAATTA ATTCAAACCT	420
ATCCGGTGCA GAGAGTATAG CATTAAATC TGTATTACA CTAACAAGTG GAGCGATATT	480
TTATTTTGTC TCAGGAATGT TTTCACATAT CTTGGGATTC AGGCTTGAAA CAAATTTAAG	540
AAAAAGGGaA TCGATGGTCT GGAAGGCA AGTTTTAGGT TCTTTGACTT AAATCCATCT	600
GGTCAAATAA GAAAGATTAT AGATGPCAAT GCTGCACAAA CTCATCAGGT GGTAGCACAC	660
ATGATTCCCG ATAGTTCTCA GGCAATAATC ACACCCGTAC TTGTACTTGC ACTTGGCTTT	720
ATAGTAAGTA TAAGAGTTGG CATAATTTTG CTTGCTCTTA CTATAATTGG TGGCTTAATT	780
TTAGGGGGCAA TGATGGGCGA GCAAGAATTT ATGAAGATAT ACCAAGAATC CCTATCTAAA	840
CTAAGTGCTG AAACGTGTA GTACGTGAGA GGAATGCAAG TTGTAAAAAT ATTTAAAGCA	900
AATGTAGAGT CTTTTAAAAG CTTTTATAAG GCGATAAAAG ATTACTCAA GTATGCTTAT	960
GATTATTCCC TATCTTGTA AAGGCCTTAT GTTTTGTATC AATGGTTATT TTTTGGACTG	1020
ATTGCAATTT TAATTATTCC TATAGTTTAT TTTATGACTA GCTTAGCTAG CGCAAAGGTG	1080
ATTTTACTAG AGCTTATCAT GATTTTATTT TTATCAGGAG TTCTCTTTGT TTCATTATG	1140
AGAATGATGT GCACTCCATG TATATTTCTC AAGGAAATTA TGCAGTAGAT ACTTTAGAGG	1200
CGCTTTACGA AGATATGCAA AAAGACAAAT TAGTGCATGG TAATGTCAAT AATTTTAAAA	1260
ACTATAATAT AGAATTTGAG AATGTTAGCT TTGCTTATAA TGATAAAGCT GTCATTGAAA	1320
ATTTATCCTT TAATTTAGAA GAAGGAAAGT CCTACGCACT TGTCGGTTCA TCTGGATCAG	1380
GCAATCAAC AGTAGCAAA CTTATATCAG GTTTTACAA TGTTAATAAA GGAAGCATAA	1440
AGATAGGCGG GATAGCAATA AGTGAATATT CTGACGAAGC CTTAATTAAA GCCATTTCCCT	1500
TTGTTTTTCA AGATTCAAAA TTATTCAAGA AGAGCATTTA TGATAATGTA GCGTTAGCTA	1560
ATAAAGATGC GACGAAAGAT GACGTTATGA GAGCCTTAAA ATTAGCAGGA TGCGATTTAA	1620

1142

TATTAGACAA ATTCCCAGAA AGAGAAAATA CAATCATAGG CTCAAAAGGT GTTTATTTAT	1680
CCGGTGGAGA AAAACAAAGA ATTGCAATTG CTAGAGCAAT TTTAAAGGAT TCCAAAATTA	1740
TTATTATGGA TGAAGCATCA GCATCTATTG ACCCAGATAA CGAGTTTGAA TTGCAAAAAG	1800
CTTTTAAAAA TCTTATGAAG GATAAAACAG TTATCATGAT TGCACACAGG CTATCTACAA	1860
TTAAAGACCT TGATGAAATT ATTGTCATGG ATAGTGGAAG AATTATAGAA AGAGGGCTCG	1920
ACAAAGAATT AATGTCAAAA GATACAAGGT ATAAGAGCCT GCAAGAGATG TTTAACAGTG	1980
CGAATGAATG GAGGGTTTCA AATGAAAGAG TTTTATAAAA AAAGATTTGC TCTTACAGAT	2040
GGAGGAGCAA GAAATTTAAG TAAAGCAACA CTGGCTTCAT TTTTCGTTTA TTGTATAAAC	2100
ATGCTTCCTG CCATATTACT TATGATTTTT GCTCAGGAAG TTTTGGAAAA TATGGGCAAA	2160
AGCAATGGCT TTTATATAGT ATTCTCAGTT TTGATTTTGA TAGCAATGTA TATTTTGCTT	2220
TCTATCGAAT ACGATAAATT ATATAACACA ACCTATCAAG AAAGTGCAGA TTTAAGAATA	2280
AGGACAGCGG AGAATTTATC AAAATTACCT CTATCTTACT TTTCTAAACA TGACATTTCC	2340
GACATTTTCA AAACAATCAT GGCTGATATT GAAGGCATAG AGCATGCAAT GAGCCACTCA	2400
ATACCAAAGG TGGGCGGCAT GGTAATGTTT TTCCCATTA TATCTGTAAT GATGCTAGCG	2460
GGCAATGTCA AGATGGGTTT AGCTGTAATT ATTCCATCTA TTTTAAGCTT TATATTTATA	2520
CCTTTATCTA AAAAATATCA GGTTAATGGA CAGAATAGAT ATTATGATGT CTTAAGAAAA	2580
AACTCAGAAA GCTTTCAAGA AAATATCGAA ATGCAAAATGG AGATTAAAGC ATATAATTTA	2640
TCGAAGGATA TTAAAGATGA CTTATATAAA AAAATGGAAG ATAGTGAGAA AGTACACTTA	2700
AAGGCGGAAG TAACTACAAT TTTAACTTTG TCTATATCTT CAATATTTAG CTTTATATCT	2760
CTTGCTGTTG TGATATTTGT CGGCGTAAAT CTAATTATTA ATAAAGAGAT AAATTCCTCTC	2820
TACCTTATAG GATATTTACT AGCTGCTATG AAGATAACAG ACTCTTTAGA TGCATCTAAA	2880
GAGGGCTTGA TGGAAATATT TTATTTATCG CCCAAAATAG AAAGATTAAA AGAAATTCAA	2940
AATCAAGATT TACAAGAAGG CGATGACTAT AGCTTAAAAA AATTTGATAT TGATCTAAAA	3000
GATGTTGAGT TTGCCTACAA TAAAGACGCA AAAGTTTAA ATGGTGTAAG TTTTAAAGCT	3060
AAGCAGGGAG AGGTCACTGC TTTGGTAGGT GCAAGTGGCT GCGGTAAAAC AACTATCTTG	3120
AACTTATAT CAAGACTTTA TGATTATGAC AAGGGACAAA TCTTAATCGA TGGCAAAGAT	3180
ATAAAGGAAA TATCAACAGA ATCCCTTTTT GATAAGGTGT CTATTGTTTT CCAAGATGTG	3240
GTTCTCTTTA ATCAAAGCGT TATGGAATAT ATTAGAATCG GTAAGCAAGA TGCAAGTGAC	3300
GAAGAGGTTA AAAGAGCAGC AAAACTTGCA AATTGCACAG ATTTTATAGA AAAAATGGAT	3360
AAAGGTTTCG ATACAGTTAT TGGTGAAAAC GGAGCTGAGC TATCAGGAGG AGAAAGACAA	3420

1143

AGATTATCAA TAGCCAGAGC CTTCTTAAAA GATGCGCCGA TATTGATCTT AGATGAGATA	3480
ACAGCAAGCC TTGATGTAA CAACGAGAAA AAGATTCAAG AGTCTTTAAA TAATTAGTT	3540
AAAGATAAAA CTGTTGTAAT CATTTACAT AGAATGAAAT CCATAGAAAA TGCAGACAAG	3600
ATAGTAGTTC TTCAAAACGG AAGAGTAGAA AGCGAAGGTA AGCATGAAGA GCTTTTACAA	3660
AAATCAAAAA TTTACAAAA TTTAATAGAA AAGACAAAA TGGCAGAAGA ATTTATTTAT	3720
TAGGAGGACT ACAATGGATA ATAAAAAATT AAAAGTAAAA GATTTAGTAA GCATCGGTGT	3780
TTTTGGCGTA ATTTATTTTG CCTTCATGTT TGGAGTTGGT ATGATGGGCT TGATTCCAAT	3840
ATTGTTCTTA ATATACCCGA CAGTATTAGC CATAGTTGCA GGAAGTGTG TTATGTTATT	3900
TATGGCTAAG GTTCAAAAGC CATGGGCACT ATTTATATTT GGTATGATAT CACCACTTGT	3960
GATGTTTGCA GCTGGTCATA CCTACGTAGT TGTGGTTTTA TCACTTATAG TAATGATAAT	4020
AGCAGAATTA ATTAGAAAGA TTGGTAATTA TAATTCATTT AAATACAATA TGCTTTCTTA	4080
TGCAATCTTC AGCACATgGA TATGTAGCTC TTTAATGCAA ATGCTTTTAG CAAAAGAAAA	4140
ATATATGGAG TGGTCTTTGA TGAATATGGG AAAAGATTAT GTTGATGTAT TAGAAAAGTT	4200
AATAACTTAT CCTCACATGG CTTTAGTAGC CTTAGGTGCT TTCTTAGGAG GAATTCCTGG	4260
AGCATATATA GGCAAGGCTC TATTGAAAAA AACTTTTCA AATGGATTAT ATTGTGTGGG	4320
ATACTTTACT CCTTGCCTAA TTTTATGGTG CTATCTGAAT TAAACCCTAT AGTTAAGATG	4380
TTTTTGAGTA TACCTATGT TATTAGAAATG TTTATTTTAC CATTTATGGC AGCAAGCTTT	4440
ATGATAAAGA CCTCGGATGT AGGCGCAATA ATTCATCGA TGGATAAGCT TAAGATTTCA	4500
AAGAATGTAT CCATACCTAT TGCGGTTATG TTTAGATTCT TCCCATCTTT TAAGGAGGAG	4560
AAGAAAAACA TCAAAATGGC TATGAGAGTA AGAGGGATAA ATTTTAAAAA CCCAGTCAAA	4620
TATCTTGAAT ATGTTTCTGT GCCACTACTC ATTATATCAT CTAATATATC AGATGACATT	4680
GCAAAAGCGG CAGAAACAAA GGCAATAGAA AATCCAATTG CCAAGACCAG ATACATTCGC	4740
GTAAAGATAC AGCTAATTGA TTTTGTTTAT GTTTTAGCGG TTGCTGGACT TATTGTGGGA	4800
GGCTTAATAT GGTGAAATA AAAAATTTAA GTCTTGATTA TGGTGAAGAG CATATATTAG	4860
ATGATATATC ACTATCCATA GCCGAGGGAG AGTGCCTGCT ATTTACAGGA AAAAGTGGAA	4920
ATGGTAAGTC ATCTTTAATA AATTCAATCA ATGGACTAGC TGTAAGGTAT GATAACGCAA	4980
AGACAAAGGG CGAAATAATT ATTGATGGTA AGAATATAAA AAATTTGGAA CTTTATCAAA	5040
TCTCAATGCT TGTTCAACT GTTTTTCAAA ATCCTAAGAC ATATTTTTTTT AATGTCAATA	5100
CGACATTAGA ATTATTATTT TATTTGGAAA ATATCGGTCT TGCAAGAGAA GAGATGGACA	5160

1144

GGCGTTTGAA GGATATACTT GAGATATTCC CGATAAAAAA TC'TTTTGAAC AGAAATATAT	5220
TTAATCTATC CGGCGGTGAA AAACAAATTC TTTGCATTGC AGCTTCTTAT ATAGCAGGTA	5280
CAAAGATTAT AGTTATGGAT GAGCCTTCAT CGAATTTAGA TATTAAAAGC ATAAGTGT'TT	5340
TGGCAAAGAT GCTAAAGATA TTAAGAGAGA AAGGCATAAG CATAATTGTT GCAGAGCATA	5400
GAATTTATTA TTTGATGGAC ATAGTTGACC GTGTATTTT AATAGATAAA GGAAAGCTTA	5460
AAAAA'CTTA TACTAGAAGT GAATTTTAA AGCTAGATAA AAATGAATTA AATGCTTTAA	5520
GT'TTAAGAGA TAAAGAATTA AGTAAATTAA AAGTTCCTTA TTTAAAAGAA GGTGGAGAGT	5580
ATCAGATAAA AAATCTTAGT TACAAATTTA CTGATGATGA GTGTTTAAGC TTAAGAGATA	5640
TTTCGTTCAA GCTTGGGAAA ATTTATGGCA TAATAGGATC CAACGGACGA GGAAAATCAA	5700
CGCTTTTAAG ATGTTTAATA GGTCTTGAGA AAAATCAAA AGAAGAAATT TATTTTAAGG	5760
GAGAGAAGCT ATCTAAAAA GAAAGACTCA AAACTCTTC ACTTGTTATG CAAGATGTAA	5820
ATCATCAATT ATTCACAGAT GAAGTATTCA ACGAGCTTAG ATTAGGAGTA AAGAATTTTG	5880
ATGAAGAAAA GGCGAAATC ATTTTAAACC CCAATTATTC ACCCAAATC TAAAAACCAT	5940
CCAGAATCCT TGCCTTAGCT TAGATCCTGG ATGGTTTCTT TTTTCACCCA ATGGGTGTTT	6000
TTTACTAGAC AAAAAGAGT TTCCCTTTA TGGTATAAGT GTAGAAAAA ACACAAAAG	6060
AAAGGAAACT CACATGAACA GTTTACCAA TCATCACTTC CAAAACAAGT CTTTTACCA	6120
ACTATCTTTC GATGGAGGTC ATTTAACCCA GTATGGTGGT CTTATCTTTT TTCAGGAACT	6180
TTTTTCCAG TTGAACTAA AAGAGCGGAT TTCTAAGTAT TTAGTAACGA ATGACCAACG	6240
CCGCTACTGT CGTTATTCGG ATTCAGATAT CCTGTCCAG TTCCTCTTTC AACTGTTAAC	6300
AGGTTATGGA ACGGACTATG CTTGTAAAGA ATTGTCAGCT GATGCCTACT TTCCAAAATT	6360
GTTGGAAGGA GGGCAGCTTG TTCACAGCCA ACCTTATCCC GTTTTCTTTC CAGAACTGAC	6420
GAGGAAACAG TCCATAGTTT GCGATGCCTC AACCTTGAAT TGGTCGAATT CTTTTTACAT	6480
GTTTACCAGC TG	6492

(2) INFORMATION FOR SEQ ID NO: 189:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 7174 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 189:

AACTGAAGGT AAAGGCTTCG ACGCAGAACG TGACGCTGCC CAAGCTGCCC TTGATGACCT	60
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1145

TAAGAAAGCT CAAGAAGACA ACAACTTGGA CGACATGAAA AAAAACTTG AAGCATTGAA	120
CGAAAAAGCT CAAGGACTTG CTGTTAAACT CTACGAACAA GCCGCAGCAG CGCAACAAGC	180
TCAAGAAGGA GCAGAAGGCG CACAAGCAAC AGGGAACGCA GGCGATGACG TCGTAGACGG	240
AGAGTTTACG GAAAAGTAAG ATGAGTGTAT TGGATGAAGA GTATCTAAAA AATACACGAA	300
AAGTTTATAA TGATTTTGT AATCAAGCTG ATA ACTATAG AACATCAAAA GATTTTATTG	360
ATAATATTC AATAGAATAT TTAGCTAGAT ATAGAGAATT ATATTAGCTG AACATGATAG	420
TTGTATCAAA AATGATGAAG CGGTAAGGAA TTTTGTTACC TCAGTATTGT TGTCTGCATT	480
TGTATCGGCG ATGGTACCAG CTATGATATC ATTAGAAATA CAAACATATA AATTTGTAAT	540
ACCGTTCATA ATTGGTATGA TTTGGACAGT AGTTGTATTT CTTATGATCA ATTGGAATTA	600
TATAGGCAAA TACTAAGAAG AGACAAAAAT ATATAAATAT TTCTGTACTT ATAGGATATT	660
TAAAATCAAA ATAAAGTTAA TTTACTTATT TGCAGAGGTT GCAACCCAGC CTCTGTTTTT	720
CGATAAAAAG GGACGGAATC TCATTTGTTT GGGTTTGTG TCATCAATAG AAAGGAACAA	780
AGAGTGTTCG TAACTGAACA CGGGTTTCAG AATTCTTAC TAAATATAAA AGAAAGGAAT	840
TGAACCCGAC CTAATGGTG GTTCGATTCA GAACATCAAT AGAAAGGAAT AAGGGTGTTC	900
GTAACCTGAA ACGGGCTATG GACTGTGCCA AAAAGATAGT TTTTCTAGG ACGTAAGCGT	960
CCGTCGTCAA AACTCCTAGA TGGCTGTGTC CGTTTGACGC CCTTTGTATC TTGAATTATG	1020
AACAATACTG AATTTTATGA TCGTCTGGG GTATCCAAAA ACGCTTCGGC AGACGAAATC	1080
AAAAAGGCTT ATCGTAAGCT TTCCAAAAA TATCACCCAG ATATCAACAA GGAGCCTGGT	1140
GCTGAGGACA AGTACAAGGA AGTTCAAGAA GCCTATGAGA CTTTGAGTGA CGACCAAAAA	1200
CGTGCTGCCT ATGACCAGTA TGGTGCTGCA GGCGCCAATG GTGGTTTTGG TGGAGCTGGT	1260
GGTTTCGGCG GTTTCATAGG GGCAGGTGGC TTCGGTGGTT TTGAGGATAT TTTCTCAAGT	1320
TTCTTCGGCG GAGGCGGTTT TTCGCGCAAT CCAAACGCTC CTCGCCAAGG AGATGATCTC	1380
CAGTATCGTG TCAATTTGAC CTTTGAAGAA GCTATCTTCG GAACTGAGAA GGAAGTTAAG	1440
TATCATCGTG AAGCTGGCTG TCGTACATGT AATGGATCTG GTGCTAAGCC AGGGACAAGT	1500
CCAGTCACTT GTGGACGCTG TCATGGCGCT GGTGTCATTA ACGTCGATAC GCAGACTCCT	1560
CTTGATATGA TGCCTCGCCA AGTAACCTGT GATGTCTGTC ACGGTCGAGG AAAAGAAATC	1620
AAATATCCAT GTACAACCTG TCATGGAACA GGTATGAGA AACAAGCTCA TAGCGTACAT	1680
GTGAAAATCC CTGCTGGTGT GGAAACAGGT CAACAAATTC GCCTCGCTGG TCAAGGTGAA	1740
GCAGGCTTTA ACGGTGGACC TTATGGTGAC TTGTATGTAG TAGTTTCTGT GGAAGCTAGC	1800

1146						
GACAAGTTTG	AACGTGAAGG	AACGACTATC	TTCTACAATC	TCAACCTCAA	CTTTGTCCAA	1860
GCGGCTCTTG	GTGATACAGT	AGATATTCCA	ACTGTTACAG	GTGATGTTGA	ATTGGTTATT	1920
CCAGAGGGAA	CTCAGACTGG	TAAGAAGTTC	CGCCTACGTA	GTAAGGGGGC	ACCGAGCCTT	1980
CGTGGCGGTG	CAGTTGGTGA	CCAATACGTT	ACTGTTAATG	TCGTAACACC	GACAGGCTTG	2040
AACGACCGCC	AAAAAGTAGC	CTTGAAAGAA	TTCGCGGCTG	CTGGTGACTT	GAAAGTAAAT	2100
CCAAAGAAAA	AAGGCTTCTT	TGACCATATT	AAAGATGCCT	TTGATGGAGA	ATAATACTCT	2160
TCGAAAATCT	CTTCAAACCA	CGTCAGCGTT	GCCTTGCCGT	ATATATGTGA	CTGACTTCGT	2220
CAGTCGTATC	TACAACCTCA	AAACAGTGTT	TTGAGCAGCC	CGTGGCTAGT	TTCTAGTTT	2280
GCTTTTACT	TTATAGATTT	TTTAAGACTT	TCCTAAGTAA	TGACGGACGG	TAGTGACCTC	2340
CTTCGAAGTT	CCATACCTAA	ACTTTGAACC	TAAGTTTTAA	AGTTTCCGGA	CAGCTGAAAC	2400
CAAGCTGTTT	CAGGTGTTTT	CATTACGGCA	GAAAGTCTTC	GATTTAGTTG	TGAAATGGTG	2460
AATGATACTC	TTCAAAAATT	TCTTCAAACC	ACGTCAGCGT	CGGCTTGTC	TGGGTATGGT	2520
TACTGACTTC	GTCAGTTCTA	TCCACAACCT	CAAAACAGTG	TTTGAGCTGA	CTTCGTCAGT	2580
TCTATCCACA	ACCTTAAAAC	GGTGTTTTGA	GCAGTCTGTG	CCTAGCTTTC	TAGTTTGCTT	2640
TTTGATTTTT	ATTGAGTATG	AATTACCTAA	ATTATGATGC	ATAGTTGATG	GGATATATAT	2700
AATAGATTGA	AATAGAATAT	GAACAAATTG	ATAAGAGGAT	TTTAAAGTAA	TCTCTAACAA	2760
TGCTTTAGAA	ACTATGGTGT	GCTATTCTAA	ATTCAATTCA	CTATAACTTG	TTTACGTTTT	2820
AAAAAAGAGC	CGTCGGGCTC	TTTTTACTTA	TCTTCAGTTC	CCTGCATTTT	TTTTATCACA	2880
GCTAGTCTAG	TCTGGATATC	CTTTTCCAAG	ACCTTAAACT	TGTAAGTCAA	GTCTTCTTGG	2940
TATTCCTTGA	TAAGTTCTTT	TTGCTGGTTA	ATGATTTGCA	GGCTGTTTGT	GATAATATCC	3000
ACATCGTCCT	TGATAGCTTG	AACGCGGTCA	GTGGTATTCA	AGACTTCATC	TGTGATGGTT	3060
TGGCGATTTT	TTGTAACCAG	ATAACTTCCG	GCTGCAGCTC	CTGCAAATAG	CAGTAGGTTG	3120
GATAATTTC	TAGCAACTCC	TTAAGCGTTT	TTGATGGTTT	CAGCGACTTG	AGCAAGTTTG	3180
TCAAAGTCTG	GTTTCGTGGC	GATAAAATCA	ATCTTGAGGT	CATCGTCAGC	ACTGTAGCGA	3240
GGCACAAAGT	GAACGTGAGT	ATGAAAAACT	GTTTGACCAG	CGACTTCTTC	ACAGTTGGAA	3300
ATGATATTCA	TACCAGCAGC	CTTAGTGACT	TTCATGACTT	TTTGAGCTAC	TTTTGGTACT	3360
TGGGCAAAGA	GTTGGCTGGC	GCTCGTAGCA	TCCATCTCCA	AAAGATTGCG	ATAGTGTCTT	3420
TTTGGCACGA	CCAAGGTGTG	TCCTAGTGTT	ACTTGAGAGA	TATCAAGAAA	GGCAAGGACC	3480
TGCTCATCTT	CATATACTTT	TGAAGCAGGA	ATTTCCCCTG	CGATGATTTT	ACAAAAAATG	3540
CAATCTGACA	TAAAATCTAC	CTCTACTGTA	CTGAATTTTG	ATATAATATA	GCTACATTAT	3600

1147

ACCAGATTG	GAGAAAATAT	GTTAGAAATT	AAAAACCTGA	CAGGTGGCTA	TGTTTCATGTT	3660
CCTGTTTTGA	AAGATGTGTC	CTTTACTGTT	GAAAGTGGGC	AGTTGGTCGG	TTTGATTGGT	3720
CTCAATGGTG	CTGGGAAATC	AACGACGATC	AATGAGATTA	TCGGTCTGTT	GGCACCTTAT	3780
AGTGGCTCCA	TCAATATCAA	TGGCCTGACT	CTGCAAGGAG	ATGCCACTAG	CTACCGCAAG	3840
CAGATTGGCT	ACATTCCTGA	GACGCCTAGT	CTGTATGAGG	AATTGACCCT	CAGAGAGCAT	3900
ATCGAAACGG	TTGCTATGGC	TTACGGTATT	GAGCAAAAAG	TGGCTTTCGA	ACGAGTAGAG	3960
CCCTTGTTAA	AAATGTTCCG	TTTGGAACAG	AAATTAGACT	GGTTCCTGT	TCATTTTCA	4020
AAAGGGATGA	AGCAGAAGGT	CATGATTATC	TGTGCTTTTG	TGGTGGATCC	AAGCTTTTC	4080
ATCGTGGATG	AGCCTTTCCT	TGGTCTTGAT	CCGCTGGCTA	TTTCTGATTT	GATTCAGCTT	4140
TTGGAAGTGG	AGAAGCAAAA	GGGCAAGTCT	ATTCTCATGA	GTACCCACGT	GCTGGATTCC	4200
GCGGAGAAGA	TGTGTGATGC	CTTTGTCAAT	CTTCACAAGG	GAGAGGTGCG	TTCCAAAGGC	4260
AATCTCCTGC	AACTACGTGA	AGCCTTTGAT	ATGCCTGAGG	CTAGTTTGAA	TGATATTTAC	4320
TTGGCTCTGA	CCAAAGAGGA	GGATCTATGA	AAGACTTGTT	TTTAAAGAGA	AAGCAGGCCT	4380
TTCGTAAGGA	GTGTCTTGGT	TATCTGCGCT	ATGTGCTCAA	TGACCACTTT	GTCTTGTTCC	4440
TGCTTGTCCT	GTGGGGCTTT	CTAGCCTACC	AGTACAGTCA	ACTCTTACAA	CATTTTCCTG	4500
AAAATCATTG	GCCTATCCTT	TTGTTTGTAG	GAATTACGTC	TGTTTACTT	TTACTTTGGG	4560
GAGGAACTGC	CACCTATATG	GAGGCTCCAG	ACAAGCTCTT	TCTCTTAGTT	GGAGAAGAGG	4620
AAATTAAGCT	CCATCTCAAG	CGTCAAACTG	GCATTTCCCT	AGTCTTTTGG	CTCTTTGTAC	4680
AGACCCTTTT	CTTGCTGTTA	TTTGCGCCTT	TATTTTTAGC	AATGGGTTAT	GGCTTGCCAG	4740
TTTTTCTGCT	CTATGTGCTT	TTATTGGGGG	TAGGAAAATA	TTTCCACTTT	TGTCAAAGG	4800
CCAGCAAATT	TTTCACTGAA	ACTGGACTGG	ACTGGGACTA	TGTTATTTCT	CAAGAAAGCA	4860
AGCGTAAGCA	AGTCTTGCTT	CGTTTCTTTG	CCCTCTTTAC	GCAGGTCAAG	GGAATTTCAA	4920
ACAGCGTTAA	GCGTCGTGCC	TATCTGGACT	TTATTTTAAA	GGCTGTTTCA	AAGGTGCCTG	4980
GGAAGATTG	GCAAAATCTC	TATCTGCGTT	CTTATCTGCG	AAATGGCGAC	CTCTTTGCTC	5040
TCAGTCTTCG	TCTTCTCTTG	CTTTCCTTGC	TGGCGCAGGT	TTTTATCGAG	CAAGCTTGGA	5100
TTGCGACAGC	AGTGGTAGTT	CTCTTTAACT	ACCTCTTGCT	CTTCCAGTTG	CTGGCCCTCT	5160
ATCATGCCTT	TGACTACCAG	TATTTGACCC	AACTCTTTCC	GCTGGACAAG	GGGCAAAAGG	5220
AAAAAGGCTT	ACAGGAGGTA	GTCGAGGAT	TGACCAGTTT	TGTTTACTT	GTGGAATTAG	5280
TTGTTGGGTT	GATTACCTTC	CAAGAAAAAC	TAGCCCTTCT	AGCCTTACTA	GGAGCTGGTT	5340

1148

TGGTTTTACT AGTCTTGAT	TTGCCTTATC AGGTAAAACG	TCAGATGCAG GACTAACATT	5400
GCTGATACGA CACTAAAAA	GAAGTTGAGT TCAGTCTGTC	TCAACTTCTT TTTTGTACT	5460
ACAGGATAAT GGTGGTCCG	TAGAGACTTA TACTCTTCGA	AAATCTCTTC AAACCACGTC	5520
AGCGTCGTCT TACCGTACTC	AAGTACAGCT TCGGCTAGC	TTCCTAGTTT GCTCTTTGAT	5580
TTTCATTGAG TATTAAGTTG	GTCTTGACTT GGTCAAAGTG	GAAGCGGTCA TAGGCCCGCC	5640
AAGCGGCGCG AGTTGGAGCA	TCTGGATCAA GAGCGCTGAG	TCCCATGAGA AGACTGGAAG	5700
TCTGGTAAAA TTTTCTAGT	TCAATCAAGA ATCGATTATC	CACTGTTTCA GCCTTGGCTA	5760
GAAAACCAAG AATAGAGTTT	AATTGCTCCT GAAAGCGGAC	GTCGTCAGCG CTGCGCTGTT	5820
TGCATGCTTG GTAGGCTTTG	TTTAAGTCAG TAATCAAAGT	ATGAGCTCTT TTGATGGGT	5880
CTGTATCTGT CATGGGAATG	CCTCCTTTAA TCTGGGTGCC	AGTCTTACTT CTGGCAACTG	5940
TGTTTTGATA CTGTTAGTTT	ATCACTTTTA ATTCTTTTTT	TTTATTCAA TCTTTAATTG	6000
TCATTGAAAT GTCTTGAATT	CGCTGAGTG AATTTTATGA	TAAAATAGTT GTAAGCTCAT	6060
CATGATGTTG TAGAAAATAA	TCCTTTTAGG AGTTTTCAAA	GACTGTTTAG GATTGGGTGT	6120
GCTTGGGCTA GACCTTTTCT	GTTATTCTTT TCTTAGGAGG	AGAATCCAAT GAAATATATG	6180
ATTATTGAGA CGCAGAAAAC	AGTCTATAAA GTAAACATCG	ACGATATCTA CTATATCCAA	6240
ACACATCCAA CTAAGCCCA	TACCGTACAG ATTGTTACAG	AAGAAGCTAG TTTTAATATG	6300
CTTCAAAATT TAAGTAATCT	TGAGAACCAA TGTGGGAAA	CCTTGATGAG ATGTCATCGA	6360
AATTGTTTGG TTAATCTTGA	TAAATTAAAA TCGATTGATT	TTCAAGAAAG AATCCTTTTT	6420
CTCGGAGAAG AAGGTCAATA	CGCTGTCAAG TATGCCAGAC	GTCGCTATAG AGAAATTCGT	6480
CAAAAATGGT TGAAAGAGGG	AGAGTAAGAA GATGAGAATA	TTTGTTTTAG AGGATGATTT	6540
TTCCCAACAG ACTAGAATTG	AAACGACGAT TGAGAACTT	TTGAAAGCAC ATCATATCAT	6600
TCCTAGCTCT TTTGAGGTAT	TTGGCAAGCC GGACCAACTG	CTGGCTGAAG TGCATGAGAA	6660
GGGGGCCCAT CAGCTATTCT	TTTTGGATAT TGAGATTCTGA	AATGAAGAGA TGAAGGGACT	6720
GGAAGTGGCT AGAAAGATTC	GGGATCGGGA TCCTTATGCC	CTGATTGTCT TTGTGACGAC	6780
TCACTCGGAG TTTATGCCCC	TGTCTTTTCG CTACCAAGTG	TCTGCTTTGG ACTACATTGA	6840
TAAGGCCTTG TCAGCAGAGG	AGTTTGAATC TCGATCGAG	ACAGCCCTCC TCTATGCCAA	6900
TAGTCAAGAT AGTAAAAGTC	TGGCGGAAGA TTGCTTTTAC	TTTAAATCAA AATTTGCCCA	6960
ATTTCAGTAT CCTTTTAAAG	AGGTTTACTA TCTCGAAACG	TCGCCCAGAG CCCATCGTGT	7020
TATTCTCTAT ACCAAGACAG	ACAGGCTGGA ATTTACAGCG	AGTTTAGAGG AGGTTTTCOA	7080
GCAGGAGCCC CGTCTCTTGC	AGTGCCACCG CTCTTTTCTC	ATCAATCCTG CAAATGTGGT	7140

1149

GCATTGGAT AAGAAAGAAA AACTGCTTTT CTTT

7174

(2) INFORMATION FOR SEQ ID NO: 190:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 3207 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 190:

CCACCAGGGA AAATCATTGA AGTTGGTAGT CACCAAGAGT TAATGCAGGC GCAAAGTTTC	60
TACCATCATC TATTCAATAA ATAAGGAGAA TGTCATGAAT CCTAATCTTT TTAGAAGCGT	120
CGAGTTTAT CAGAGACGTT ACCATAACTA TGCGACAGTG TTAATTATAC CTCCTTCATT	180
ACTATTTACT TTCATCTTGA TTTTCTCCCT TGTTGCCACA AAAGAAATTA CTGTTACTTC	240
CCAAGGAGAA ATCGCCCCTA CagTGTCATT GCCTCCATTG AGTCAACCAG TGATAATCCT	300
ATCCTAGCTA ATCATTTAGT GGCAAATCAA GTAGTTGAAA AAGGGGACTT ACTCATCAA	360
TACTCTGAAA CAATGGAAGA AAGTCAGAAA ACTGCCTTAG CAACTCAATT ACAAGACTT	420
GAGAAGCAAA AAGAAGGACT TGAATTTTG AAACAAAGCT TAGAAAAAGC GACTGATCTT	480
TTTTCTGGCG AGGATGAATT TGGCTACCAT AATACCTTTA TGAATTTTAC TAAACAATCC	540
CATGATATTG AACTGGGTAT CACAAAGACT AACACCGAAG TTTCAAATCA AGCTAATCTT	600
TCCAATAGCA GTTCATCAGC TATTGAACAA GAAATTACAA AAGTTCAACA ACAAAATGGA	660
GAATATCAAG AGTTGAGAGA TGCTATCATA AATAACAGAG CACGCTTACC AACTGGCAAT	720
CCGCACCAGT CAATTTTGAA TCGTTATCTT GTAGCCTCAC AAGGACAAAC ACAAGGAAC	780
GCAGAGGAGC CATTTTATC TCAAATTAAT CAAAGTATTG CAGGTCTTGA ATCATCTATC	840
GCAAGCCTCA AAATTCAGCA AGCTGGTATC GGAAGTGTAG CAACTTATGA TAACAGTTTA	900
GCAACCAAAA TTGAAGTACT CCGCACTCAG TTTTACAGA CAGCCTCACA GCAACAATA	960
ACTGTGGAGA ATCAATTAAC AGAATTAAAA GTACAACTAG ATCAAGCCAC ACAGCGTTTG	1020
GAAAACAATA CCTTAACCTC CCCAAGTAAA GGTATCGTTC ATCTGAACAG CGAATTTGAA	1080
GGTAAAAATA GAATTCCAAC TGGTACAGAA ATTGCTCAA TATTCCTGT CATCACAGAT	1140
ACAAGAGAAG TACTAATCAC TTACTACGTA TCTTCTGACT ATCTACCTCT ACTAGATAAA	1200
GGACAACTG TAAGATTAAA ACTGGAGAAG ATTGGAAATC ACGGCACCAC CATCATCGGC	1260
CAACTTCAGA CAATTGATCA AACTCCTACC AGAACAGAGC AAGGAAATCT CTTTAAATTA	1320

1150

ACCGCTCTTG CAAAACTATC TAACGAGGAT AGTAAACTCA TCCAATATGG CTTACAAGGT	1380
CGCGTCACTA GTGTAAC TAC AAAGAAAACA TATTTTGATT ATTTCAAAGA TAAAATTTTA	1440
ACACATTCTG ATTAATTTTC AGATAACACT CTATAACTAT TTATTATCTT ATCAAAAAGG	1500
AGAATCATAA CATGGATAAG AAACAAAACC TAACTTCATT TCAAGAACTA ACAACTACCG	1560
AACTCAATCA AATTACAGGT GGAGGATTGT GGGAAAGATT ATTATATAAC ATTAATAGAT	1620
ATGCTCATT A CATCACATAA GAACTTCATC ATCCAATACA ACTATAAAAA AATAAGACCG	1680
AGAAACAAGT ACTCTCGGTC TTATTTTTC TCAATTCTGT TGTATCACAG TAAGTACCTG	1740
ACGAAAGACT TGATTTTGAC AGGTGGTATT TAGACTGGTA TTAGGATGGC TTTCCACAAT	1800
CTTCATGACG GTATAGAGAC CAACTCCTCT CTCCTCCCCT TTAGAAGCTG CTCCAAAGGA	1860
GAAGATTTCA GAAATATCGA TGCCCTCTTC TTTGATGGAG TTTTCGATGA TAAAGGTCTC	1920
CTGTGCTCCA TTTTAAAA AGGCGATTGA AACATGAGGT TGAAGCTT CCACACTGGC	1980
TTCAATAGCA TTGTCACAAA GGATAGACAC AATGGTTAGA AAATCAAGTA GACTCATCCC	2040
CTCGACCTGA ATCTCCTCAG GAACTTCGAC ATTAAAGACA ATGTTCTTAT CTCTGGCTTT	2100
TAAAAATTTT CCTGCTAGAA GACTTTTGAG GGCTTTATCA CGAATATTTA CCAATCTGCC	2160
CAGGTCATAT TTATGTGTTCT GCAATTTCTG ACTGGAATCC TTTAAGACGG AGCCATAGAC	2220
CTCTTTTATC TGCTCCATAT CCTCCTCTTC AATGCCCAGA CGTAAGCTAG TCAAGAGGTT	2280
GGTATAATCA TGACGAAAGC TCCGTACTTC CTGTGTAAGC TCCTCTATAT GCCGACTATA	2340
GCGTTCATA TCTCTATAGC GCAGGGCCTG CTCTTGTTCC AATCTCTCAT AGAGTTTTTC	2400
CTTCAAATAG GTATCCAATT TCTTGATAAC CCCCATAAAA AAGAGTAGGT AAAAGACTAG	2460
GATGAGATGG CGAACAGTCT TTGATTGAAT ACTTTGTTCA TATTCAAAAA AAGACAGACT	2520
TTCCATGACT AGATAGTAGC CACCCATTAT CCAGTTAATC TGAGTCAGGG ACTTTTGAAA	2580
GGCTTTATCG AGAATCTCCT TTCTCAAGCT AGTAAATCG TAGTCCAACC ATTTCAAAAA	2640
AGCTAGAGAA ATGAAGAAAT TGAAAATTAT TATACATAAC CCAGTAAATG AGTAGCCATC	2700
ATATACTTGC CCTGTCCCA AAAATGGAAG CACAAAATAG GAGACTCCTC TATAAAAGAG	2760
ATTCACCAAT ATCATTGGAA AGAGACCATA AAAGAAAAGG AGTTTTTTAG GAAGCCCTCT	2820
CAATAATAAG AAAGATAAGC CTATGCCGTA CAAGGGTTCC ATAAAATAAG ATAGGTAAAC	2880
ATTTCTACT ATATAGCTAA TCATCACAAA AACAAAGGCC AACAGTATCT TCAAAAGAAA	2940
GGCCTTAAAA ATCCTCTCGA AAGTAAGATC AATTCATCC ACCTTAAAGA AGATGACAAAT	3000
TTCTAGTCCA TTAGTAACAA GTGTATACAA CAATATCCAA GCAATGTTCA TAAATCTCTC	3060
TAGCTCAGTG TAATTTATTG ATGGCCTCAG ACACCTCCCT GACCTTATAA CGGGCGATTA	3120

1151

GACAACTTCC ACCATTGGGA GAGAAGAGCA GTTTTCTCTT CTTATCCAAA TGCACCACAT 3180
 TTGCAGGATT GATGAGAAAA GAGCGGT 3207

(2) INFORMATION FOR SEQ ID NO: 191:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 10357 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 191:

CTGAATCAAG TGTAAGTGCAC CAGTTCGTGC ATCAGGCATA ACAACATCTA CAGATATAAT 60
 ATTGTTTTCT GAGTCCGCCT CATAAGTTAA AATCATAAAT TTTTCGATAT TCGAATTTTT 120
 AGTAGCTTGT TCAATTTCTT GAATCATTTT ATCAGAAACT AACTCCATCT GAATTGGAAA 180
 GGAATGACTA TTTTCATCAT TTTTGTAGGA AGAATGTTGA TTAAGATAAA GTGTATTCAT 240
 CTGAGCATAT TCAAATAAGT AGCCACTCTT ATTTTCTTGT ACCAAAGGAA ATTGGTTTGT 300
 AAGTCGCTTC TTACCCCTTA TAATTAACAA TACTTTCCCA TATTTTCTG TATTTGTTC 360
 AAATCTCTAA TATCCCAAG TCTGTCTGCT TAATTGTAAT TTATACTCA ACAAATCTGC 420
 TGATGCAAAT GCAGTATCAA TATGATTAGG TCGCGTCCAT GCATAACCAT TCGACACTAT 480
 CATGTCTCT CTTTTTCTA GACGTTTCATC TACATAATCT TTTTGCCCTT TCATCAAAGT 540
 ATCTACAATT TTTTGTGCCT CAAGCGAATC AAAGAGATCC TGATTCAACA TAATCTTCC 600
 TCCTCCAAAT ACTTTTAAAT GAATTATACC ATTTTCTTAA AGAAATTACT ACAATAATTA 660
 TCTTTTCTT AAAGTTCTGT GTCAGAGTAA TTTAGAAAAT TATATCTTCT ATAGTAAAAT 720
 CAATTAAAAA CTGAACAAAT TTATTGGGAA ATTCAAATCG CTTTCTGAAA ATATTTTAGG 780
 AACCGTAGTG TAATATTCCA GATTCAATTC ACTATAAAAC TGACCTTTCT CCTGCAAAAG 840
 AAAAAGGAAA GACTTCCTTT CGTGCCTTTC CTCTTACTTG CTACTTGTTT GATTATTTTT 900
 GGTAAGCTAC TGCTTGCTG ATAAATCCT GAATCGGCTC TCCTTGGTGG AGAGCTTTTA 960
 CTATTTTCGA ACCGACGATA ACACCATCTG ACACCGCATT GAAGCGTCC AGATCGGCTT 1020
 GACTAGATAC ACCAAAACCT GTCAAGACTG GGATGTCGGC CACTTGATGA AGTTGCGCCA 1080
 AGTGCTTGTC CAAATCTGCA CGGTAATTGC CTGATTTCCC TGCTACTCCA TTGATGGCAA 1140
 CGGCATAGAT GAATCCCTCC GCCCCTTCAA TCAACTCTTT CTGGCGCTCA ATTCCTGTGG 1200
 TCAAGCTTAC TAAAGGAATC AAGCGATAT CTGTATTTGC CAAAAATGGT TCTACAAAGT 1260

1152

TGGCATGTTC ATGAGGCAGG TCTGGGATAA TCAAGCCCTT CACAGCTGTA TCAGCCAGAT	1320
CTTTGACAAA GTTCTCCACA CCGTACTGAA AGAGGGGGTT GAAGTAGGTC ATGATGACCA	1380
GTGGAATCTC TGTTCATG GTTTTCAAGG TTTCAACTAA AGCCTGGGTA GAGGTCCCGT	1440
GGGCTAAACT GCGCAAGCCA GCTTCTTCGA TAACAGGTCC ATCTGCAACA GGGTCTGAAA	1500
AGGGAATACC CACTTCAATT GCAGAGACAC CCAAATCTTC TAAAAAGTGA ATTGTTTCAG	1560
CAAGACCGTC CAAACCTTTC TCGTGGTCAC CAGCCATGAT ATAGGGAACA AAAATTCCTT	1620
TTCCAGCTGC TTTAATAGCA TTTAATTTT CTGTTAGTGT CTTAGGCATG AGCTTCTCCC	1680
TTCTTTGCTG CATCTGCTTC CAAGCGGTCC TTGACTTGAA CCACATCCTT GTCCCCACGA	1740
CCTGATAGGC AGACAATCAT AGACTTTTCT GGTCCAAGTT CTTTGGCCAA TTTCAACGCA	1800
AAGGCGATAG CATGGCTAGA TTCCAAGGCT GGGATAATCC CTTCCACACG AGACAAGAGT	1860
TGGAATCCTT CCAAGGCTTC TTCGTCTGTC ACAGGGACAT AGCTGGCACG TTTAATATCG	1920
TGGTAGTGAG AATGCTCTGG ACCGATACCA GGATAGTCCA AACCTGCTGA GATAGAGAAG	1980
GCTTCAAGAA TTTGACCATG GGCATCTTGG AGCACATCCA TGAGGGAACC GTGAAGGACA	2040
CCTGGACGAC CCTTGGTCAA GGTAGCTGCG TGGTGCTCTG TATCCACACC AAGCCCTGCT	2100
GCTTCAGTTC CATACATAGC TACTGACTCA TCTTCTACAA AGGGATGGAA GAGCCCGATA	2160
GCATTCGACC CACCACCAAC ACAGGCTACT AGGGCATCTG GCAGATCTCG ACCTGTCAAG	2220
TCACGGTACT GTTGTTTAGC CTCTCGACCG ATGACACTTT GGAAGTCACG AACGATTTCT	2280
GGAAATGGAT GAGGCCCCAA GGCAGAACCA AGGATATAGT GGGTATCGTC GATATTAGCC	2340
ACCCATGAAC GAAGGGCTGC ATTGACCGCA TCCTTGAGCA CGCGCGAACC ATCTGTTACA	2400
GCCTCGACCT TGGCTCCCAA AAGCTCCATG CGGAAGACAT TGAGGGCTTG GCGTTTGACA	2460
TCTTCCTCAC CCATGTAGAT GGTACATTCC ATGTTAAAGA GGGCTGCAGC AGTTGCAGTT	2520
GCCACACCGT GCTGACCAGC ACCCGTTTCT GCGATAATTT TCTTTTACC CATGCGTTTG	2580
GCAAGCCAAA CTTGTCCTAA GGCATTGTTA ATCTTGTTGG CTCCTGTATG GTTAAGGTCT	2640
TCCCGTTTGA GATAAATCTT GGCTCCGCCA ATATGCTGGG TCAAGTTTTT TGCCTAATAA	2700
AGAGGAGTTT CACGTCCTAC GTACTGGCGC AAAAGCTGGT TTAATTCCTC TTGGAACTT	2760
GGGTCTGCCT GACTTTCACG GTAGGCCTTC TCCAACCTCA AACTGCTGT CATCAATGTT	2820
TCTGGGACAA AACGTCCGCC GAATTTTCCG TAAAATCCAT CTTTATTTGG TTCCTGATAT	2880
GCCATGCTTT ACCCTCTCTA TAAATCTTCT AATCTTTTCA TGATCTTTT GTCCATCTGT	2940
CTCCACTCCG CTCGATACAT CTAATGCATA GGGAGTAAAG TGTTGAATTG CTTTACTAC	3000
ATTATCTTCA TTAAGGCCAC CTGCGATAAA GAAGGGCTGT GCTAGTCCAG TCGTATCCAG	3060

1153

TTGACCCCAA TCAAAGGGCT GGCCACTTCC TGCCACAGGG GCATCAAAGA GTAGATAATC	3120
TGCCTGAGAA TTGGGGACAT GCCCATTTCC ATCTACCTGC ACAGCCTGAA TACTGGCACA	3180
AGGCAAATTC TCAAATAAAT CATCTGCCAC CTGACCGTGA ACTTGAACCA AGTCCAAGCC	3240
AACTTTGTCA ATCGCTTCCA GCAGTTCTAC CCGACTTGGT GAAACAAATA CTCCAACCTT	3300
TTTCACATCT GCAGGAATAA GCTTTGCCAA CTCAGCTGCC TCTTCTAAAG TCACCTGTCT	3360
TTTACTAGGT GCAAAGACAA AACCGATATA GTCGGCTCCT GCTGAAACGG CTGTTTCCAC	3420
CGCTTCTTTG GTCGATAGTC CACAAATTTT AACCTTTGTC AATCTGCAAC TCCTTGATTC	3480
TCTGGGCCAC ATTTTCTGCC TGCATAAGAG CTGTCCCTAC CAAAATTCCT TTAAGTATG	3540
GGGCTAGTCG TTCCGCATCC TGCCCTGTGA AAATGGCAGA TTCAGAAATG TAATAGCGAC	3600
CTTCCTCAAA GTAAGGGGCT AAATCTACAC TGGCTGCAA GTCGACCTCA AAGGTAGTCA	3660
AGTTGCGGTT GTTGACCCCG ATAATCTCAG CACCAAGTCT GTGGGCTACC TCTAGTTCAG	3720
CTAGATTGTG AGTCTCCACT AAGACTTCCA GACCAAGCTC TGTCGCGTAG TCATACAGTT	3780
CCTTGAGCGG TTCTTCGGAC AAGGCTGCCA CAATGAGCAA GATAACTGTC GCACCTGCAT	3840
TGCGAGCGCG GATGATTTGC TTTTCATCGA TGATAAAGTC TTTGTTGAGC GTCGGAATCT	3900
CTACCTGACT GGAAATTTCC CGTAGATAAT CCAAATGCCC TTTAAAGAAA ACCTCATCTG	3960
TCAACACCGA AATCATCACT GCTCCGTTTT CTTCATAAGT CTGGGCCTGT TGCACAATAT	4020
CCACATCGAG ATTGATATCT CCCAACTAG GGCTAGCTTT CTTGACCTCA GCGATTACCT	4080
GCAAGCGGTC CTGATGATTC TTCAAAAATT CTGCCAAGCG ATAGGTCTGG CGCAGAGGCT	4140
GGATTTGCTC CAGCTTCATC TGCTCCACCT CACGCGCCTT CTGCTCTAAG ATTCTGTGCTA	4200
AAAATTCCTG ACTCATTTTT GGTACTCCTG TAACAGTCTG AGTTTTTCAA GGGCCTTGCC	4260
TCTAGCAATC ACTTGACGGG CCAAGGCAAC CCCTTCCTTG ATGCTATCAA TCTTACCATT	4320
AGCATAGAAA CCAAGACCAG CATTCAGAC TGTCGTTTCC AAGAATGGAC TTGCTTCGTT	4380
TTTCAGAACG CTAAGCAAAA TTTCTGCATT TTCCTGAGCA TTCCACCAC GAATATCTTC	4440
CATAGCATAG CCTTCCATTC CCAAATCCTC TGGAGTAAAG CTGACAAGC TGATTTGCGC	4500
ATTTTCAAGA AGTGCAATCT TGGTTGTTCC GTTCAAGCCA GCTTCATCCA ACCCTTCTGG	4560
TCCAGCAACC ACGATGGCAC GTTTGCGACC CATATTTTTC AAAACCTGAG CTGTACTTTC	4620
TAGGAGTTCT GGACGACTAA TTCCAAGAAG CTGTGTTTCT AAAGCCATTG GATGAATCAG	4680
TGGACCAGTC AAGTTCATAA TCGTTGGAAT TCCCAATTCC AAACGAGCTG GCATGATGTA	4740
TTTCATAGCT GGGTGCATAT TTTTAGCGAA GAGAAAGACG ATTCCAGTTT TATCAAAGAC	4800

1154

CTTACCTAGT TCAGCTGGTT TGAGGTCAAG ATTGATTCCC AAGGCTTCGA GGACATCTGC	4860
GGAACCAGAT TTAGAAGATA TCGAGCGGTT ACCGTGTTTG GCCATGTGAA TACCGCCACC	4920
AGCCAAGACA AAGGCTGCAG TTGTGGAAAT ATTAAAACTG AAAGACTTGT CCCCACCTGT	4980
ACCACAGTTG TCCATGGCAT CATGAATCTC AGTTGGAATA TGCTGGGCAT GTCCTCTCAT	5040
GA CT TGGGCA ATGGCTGTGC GTTCTTCAGG TGTTTCCCCC TTCATCTTAA GAGCTAAGAG	5100
GAGAGAAGCA ATCTGCGCTT CAGTTACACG CCCAGTTACG ATACGCTCAA TGACATCCGT	5160
CATTTCCACA CCTGATAAAT TTTCAAATTT TGCTAGTTTT TCAATAATCT CTTTCATCCT	5220
AGTTTCCTCA CTTTACAACC TCCTCGATAA AATTCCGAAT AGAAGACAAG CCGTCTGGCG	5280
TTCCAATGCT CTCTGGATGG TACTGGAAGC CATAAATCGG TAGGTTTTTA TGTGAATCC	5340
CCATGATGGC TTGGTCATCA GTCGAACGAG CTGTCACTTC AAAGTCTTCT GGCATTTCTT	5400
CAATCAAAAT ACTGTGATAA CGCATGACCG CACGCCATC CTCAATACCT TGATACAAAA	5460
CAGATGGCGC TTCAAAGTTG ATATTGCTCT GTTTCCCATG CATGACTTTT GGAGCCAAAC	5520
CTAGCTTACC ACCAAAGACT TCTGCAATGG CTTGGTGGCC CAAACAAATC CCAAGAATCG	5580
GCTTCTTGCC TGCAAAATCA CGAATCATGT CTTCCATCTT TCCAGCATCA ACTGGCCAAC	5640
CAGGACCAGG AGAAAAGACC AGACCATCTG CTTTTTCAGC TTCTTCATAC AGCTTGGAAT	5700
CATCATTTCT CAGAACCTGA ACTTCTGCAA AATTTCCCAAT GTATTGGGCC AAGTTATAGG	5760
TAAAAGAATC ATAGTTGTCA ATCAATAAAA TCATGGTCTT AGTTCTCCAA TTCTAGTCAT	5820
AGATTTTGCT TTGTTAATGG TTTCTTGTA TTCGTTTTGG GCGATAGACT CGTAGACAAT	5880
CCCTGCCCCA GCCTGCACAT AGGCTCTTTG ATTTTTGAGA ATCATGGTTC GGATGGCGAT	5940
GGCCAAATCC ATATCACCCG TCGCAGACAA GTAGCCGATT GCCCCAGCGT ATACTCCCCG	6000
TTTTTCCGTT TCCAGTTCAT AGATACGTCT CATCGCTCGA ATCTTTGGTG CTCCAGAAAC	6060
GGTTCCAGCA GGAAGCGTTG CTTTCAAGGC ATCCATGGCA GTGAGTTCTG GAAGCAAACG	6120
CCCCTTGACT ACGCTGGTCA AATGCATGAC GTAGCGGAAG AGCTCCACTT CCATATACTT	6180
AGTGACTTGG ACACTGGTCG TTTCAGAGAT GCGGCCAATA TCGTTACGCC CCAAGTCTAC	6240
CAACATTGCA TGTTCTGCTG TTTCCTTCTC ATCAGAGAGG AGGTCAGTCG CCAAGGCCTT	6300
GTCTTCTTCA TCCGTAGCCC CTCTTGGTCG CGTCCCTGCA ATCGGATTGG TTGTCACGAT	6360
GCCATTTTGG ACAGAAACCA AACTTTCTGG ACTAGCTCCG ATGATTTGAT AATCCCCAAA	6420
ATCATAGAAA TAAAGGTAAT TAGAAGGATT AGTCACGCGG AGATTTCTGT AGAAGTCAAA	6480
TGGATTTCCA GTAACCTCTG CTGAAAAACG CTGGCTGAGT ACACATTGGA ACATATCTCC	6540
GTTACGAATC AAGTCACGAG CTGTTTCTAC CATTCCCTCA AACTTATGTG GAGCGATATG	6600

1155

CGGTTTGAAG TCTAACGGAG ATAGATCCAA ATCTTCAAAT TCATTTGGAG CAGGAATGCG	6660
TAATTCCTCA AGCACTTGGT TCAAGGATTT TTCCAAGGCC TCTTGACTGC GCTCACTATA	6720
AAGTGCATCC TCTATGACAT GTATCTTCTC CTCTTGTGG TCAAAGACCA TATAGCTCTC	6780
ATAGACAAAG AAATGCATGT CTGGCGTCCC AATTGTATCC TCAGGGATTT GACCAATTTTC	6840
TTCATAAAGC GAAATCATAT CGTAACCCAC AAAACCAATG GCTCCACCAC CAAAAGGTAG	6900
CTCTGAGTGG TGCTGACTCT TATGAATCAC TTCATAAAGG AAATCCAAGG GATCCCGATC	6960
AATCACTTGA CCATTTTGAT AGAGAACCCC ATTTTCAAAC TTAATCTCAA AAAGTGGATT	7020
ATAGGCTAGG ATAGAAAAAC GAGCTGTTTC CTGTCTCTC GGAATACTCT CTAAATAAC	7080
CTTATGTTGC CCCTTTAAGC GCATATAAGC CAAGATTGGT GATAAGACAT CTCCATGAAT	7140
GATTGCTTCC ATTGTAATTT CCCTTTCAGT TCTACTTCTA GTCCGTGGTG ACTGTATGAA	7200
AAATCCCCAC GCAAAATAAC TTGCGTGAGG ACGAAATTCG CGGTGCCACC TCAATTATAG	7260
GATTTCTCCT ATCTCTCATT CCTGTCTCAG ATATCTCCTG TAACAGGCTG TGCGATAAAG	7320
GGCACTCCCT TGAGAATGAT GTTTTCTTCT CTCGTTTCAG ATGAACCCAA CTTTACAGCT	7380
TTCTCTGCTT GTTTTCAGCA ACCACAAGCT CTCTGTGAGA GAAAGAACTG TAATTTTTTC	7440
ATCTATTATT TTTTAGCTTC TAGTAGCTG CAATCGCAGC TAGGTCCTTG CCTCCACGAC	7500
CAGAGACATT GATGAAGAGA TGTTCACTC GGTACACCTT TATACTCTTC GAAATCTCT	7560
TCAAACCGCG TCAACGTCGC CTGCGGTAG GTATGGTTAC TGACTTCGTC AGTTCTATCT	7620
GCAACCTCAA AACAGTGTTT TGAGCTGACT TCGTCAGTTC TATCCACAAC CTCAAAACAG	7680
TGTTTGTGAG TGACTTCGTC AGTTCTATCC ACAACCTCAA AACAGTGTTT TGAGCTGACT	7740
TCGTCAGTTC TATCCACAAC CTCAAAACAG TGTTTGTGAG AGCCTGCGGC TAGTTTCCTA	7800
GTTTGCTCTT TGATTTTCAT TGAGTATTAC TAGCTTTTTT CGTATTAGTC CAGCCTTTTT	7860
GTTTGCTTTT AGTAGTAGGC ATGGAGCTGT AGATAGAACT CAAGTTCATC AAAGCGACTT	7920
AAGGCCCTAA TAAAGATAA ACCAAACGAC GGATAGAAAA AAGCCACAC ACAGAATATA	7980
CTTCCGTGTG AGGGCGTTGG TAACGCGGTG CCACCTCAAT TATAAAGGGA CTATCCCTTT	8040
ACATCTCTGC CTTGTTTAAAC AACAGCTGC ACTGTAAGGT GTGCGCACCG AATTTTCATT	8100
GTTTCAAATT CATTTTCAA ATCAGCCAC TTCTACTACT TCCAACCACC TATTACAAT	8160
CACCACAGGC TCCCTGAAGA TCAAAAATAG TTACTTTTCT GATTGTGTA ACTTATTTTA	8220
ATACTTTGTT TTTTCTTTGT CAAGACTTTT TTACGATTTT TTTGAAAATA TCATTCGAAT	8280
ATGACCATGT CTTCTTAGA TCGAACATGA ACATGTCCCA CTTCTTAGAA ATTGGATCCA	8340

1156

ACTCAATAGA AACTGAATGG AGGCTAAACA GAACTTATTT TAGAACACTC CATCTTTTCC	8400
ACTAGGATTT TCAAGAATTA AACAATACTA GAAACTCTGT CTCCTAACAA ATTTAGGAGA	8460
AAC'TCAACA GATGTGACAC TTTCCCTTTT AATAATTGCT AAAACACCTT CTATCATTTT	8520
TTTAGCCAAT TTAACATAAT TGGGAGCAAT TGTAGACAAA GCTGGAGTAT AATACTGAGA	8580
AATAGGAATA TTATCAAATC CAATGATAGA AATATCATCT GGAATAAGAA TTCCTTTCTC	8640
ATAGCACGCA CGAATCAAGC CCTGAACCTT TTCATCTCCT GAAACAAAAA TAATGTCCGG	8700
ATAATTTTGG GTAGTCAAGT GCTGCATTGC ATAAGAATAA ACTGAATCAA TTGTAGATAA	8760
GCCATAAATG ACTTTTAAAT CCATAAAGTA ATTTTATCA TTCAGAAAAG AACGCACACC	8820
TCTTTCACGA TCCTTATTAA CATGGGATTC TCCTCCCATG AGCAACCACA TATTTTAA	8880
TTTTTCTTCA GTTACAGCTT TCATCATATC ATAAGTAGCT TGAAAATTAT TATTAGATAC	8940
ATAGACTACT CCAGACGTTT GAGATTCACC GAAAACAAGA AAAGGCATAT GGTTCCTCTT	9000
TAAATACTGA ATTCGTATAT CATCTACACT TTCATAAAAA ACAATAACAC CATCTACTAG	9060
GCTACCTGTG CTTGATATAA TTGAATTACT AATGTATACC TCCTCTCCAA AGTACTCAAC	9120
TATAGCATTG ACACCAAATT CTTTACACGT CCGTAACACT TTATCTAACA GCGTATGAAA	9180
CCAAATTAAG GGAAGAGAGT CGATTTTTTT TACAGAAATC AATATATTTA TAGCTTCTTT	9240
TTTAGTTAAA TTTTTTGCAT ACGCATTTGG AATATACGAC AATTCCTCTA TAACTTTTTG	9300
AATCGCTTGA TAAGTTCTT CTTTAACATT TACTCCACCA TTAATAACTC GTGAAACTGT	9360
TTTTTGAGAA AAACCTGATA AACGTGCAAT ATCATAAATA GTTACCTTTT TCCCATTAT	9420
ATTTTTCATT TCAGTCCTCC ATTACGAACA TTCTAATATT ACTATACAAT ATTTAATTTT	9480
TTTTAACAAG AGAATTAGT AAATTATTTA AGATCCACAA ATTCACAAAA TTAATTTTAC	9540
AAATATTCTT CCCCTTCAAA AAAGTTTAAA TTGCATTTC AACCCTTTATT TTTAAGAATG	9600
TTTCCAACTT CACGACAAAT AAATTCATAT GAGAAAAAAC TGCCATAAAA TTGTAGATTA	9660
ACTTTTTCAG TAAAATGTGT AGGATTTATA AAAACATATA ATAGCCTGTC AATGTAACAT	9720
TTTAACATAG AGTTAATTTT TTCTTTAAAG ATAACATTGT TTATCAACTC ATCAGGAGGT	9780
AAATGAAAGG CAAACACCAT TTCACAAATA TCATAAAAAG AAATAAATTT GTATACTTGT	9840
ATCAAACAAT TATTATCAAA ATATTCTATT TTACCTAAAT CAAAATTGAT TTTATAATCT	9900
TTCATAAAAA CCTCTGAGCA AAAATCTACT CAAAAATTAG ATGATTAAAA CATCTAAAAA	9960
GCAAAAGGAC AAAAACATCT GTCCCTTTGT TACTTAAATT TCAGCTAATT TCTTCGACAT	10020
AAATAACACC TACAATATTA GCAATTCTT CCATCAGTCG AAGATGTTCA AATCTACCTG	10080
ATAATTCCAG AGTAATAAAT GACGCTATTT TTTTGTCCGG AACATCAAAG TATTCAATTC	10140

1157

TGTCAGAATT AACATCTCCA AACGCTGTTC TTGAATCGGT CATTCTGATA CCATTTTCTG	10200
CACAATAAAC CAATACACGA TTATAGGCTT CTGTAGATTT AACCACTATA TACAATTCAA	10260
TCATTTTAGA ACGATTTTGC AGATATTTTT TTAGTGGTTG GAACATGGAT ATCACACCCC	10320
AAACAGAAAT GGCTACTAAA AGAGCTCCCT CATAAGG	10357

(2) INFORMATION FOR SEQ ID NO: 192:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 6867 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 192:

CGGGACATTC TCAATCTTCT GTCTTTTGT TTTCTTCTT TTCTATGATA CAATGGAAAA	60
AATAAATTC AAAGGAGTT TTTTATGACT TATCCAAATC TCTTGGACCG CTTCTTAACC	120
TATGTTAAGG TCAACACGCG CTCTGATGAA CACTCTACTA CTACTCCAAG TACACAGAGT	180
CAGGTTGACT TCGCAACAAA TGCCTAATT CCTGAAATGA AACGTGTTGG ACTGCAAAAT	240
GTTTACTATC TACCGAATGG TTTTGCTATT GGAACCTTGC CAGCCAACGA TCCGTCTTTA	300
ACACGTAAGA TTGGTTTAT ATCGCACATG GATACTGCTG ATTTTAATGC TGAAGGAGTC	360
AATCCACAGG TAATTGAAAA CTACGATGGT GGTGTGATTG AACTAGGGAA TTCTGGTTTC	420
AAACTCGATC CAGCTGACTT CAAGAGTCTT GAAAAATATC CAGGACAAAC GCTCATCACA	480
ACAGATGGAA CAACCTTGCT AGGTGCTGAT GACAAGTCAG GAATTGCTGA AATTATGACA	540
GCCATTGAAT ATCTAACTGC TCATCCTGAA ATTAAGCACT GTGAGATTCG TGTGTTT	600
GGTCCAGATG AAGAAATCGG TGTGGTGCC AATAAATTG ATGCAGAAGA TTTTGATGTG	660
GATTTTGCCT AACTGTGGA TGGTGGTCCA CTAGGTGAAC TTCAGTACGA GACTTTCTCA	720
GCCGCTGGTG CTGAATTGCA TTTCCAAGGT CGTAATGTCC ACCCTGGTAC TGCCAAAGGG	780
CAGATGGTCA ATGCCCTTCA GCTAGCAATT GATTTTCATA ATCAACTTCC AGAAAATGAC	840
CGACCTGAGT TAACTGAAGG TTACCAAGGT TTTTACCATC TAATGGATGT GACAGGTAGT	900
GTTGAGGAGG CGCGTGCAAG CTACATCATT CGTGATTTT AAAAAGATGC CTTTGAAGCG	960
CGTAAAGCAT CCATGCAATC TATCGCTGAT AAGATGAATG AAGAACTTGG GAGCGACCGT	1020
GTCACCTCTCA ACTTGACAGA CCAGTACTAC AATATGAAAG AAGTCATTGA AAAAGATATG	1080
ACTCCAATTA CCATTGCTAA AGCCGTTATG GAAGATCTAG GTATCACGCC TATTATCGAA	1140

1158

CCAATCCGGG GTGGAACAGA CGGCTCTAAG ATTTCCCTTTA TGGGAATCCC AACTCCGAAT	1200
ATCTTTGCAG GTGGCGAAAA TATGCACGGA CGTTTTGAAT ACGTTAGCCT TCAGACTATG	1260
GAACGTGCAG TTGATACCAT CATTGGCATC GTAGCTTATA AAGGCTAAAA AGACGAGGTA	1320
GCTCAGCTAC TTCGCCCTTC TTTTATTCT ACTGGTTTTT CTTGATTTCC AGTAGTTGTA	1380
GAAGATTCTG TTGTTTCATT TTCTGAAGTT GATTCAGCAG GTTTAGAATC TCTTGATTG	1440
CTTGTTTGT TTTCGTCGCT AGCAGTTTCA ATGTTAGATT CTGCAGTTGC GTTTGGTTGG	1500
TTCTCAGCAC TGGTGTATC ACCATTGCT TCAGCATTTT TTGCTGGACT TGTTCCTCA	1560
CTTGCGCTAG CTTTGGACTG GATTTGATGA TTCAAACTA GAATAGCTTT TGTGATTTCA	1620
AGTAAAGCTG TTTTGTCTTT ACTCTTAGCA GAAAGTTGAT CTAATAATGC ATCCACCTTA	1680
TCAAAGTCCG CATCAGATCC ATTATTACTT TCTAAATAAG AGTGAAGCGA CATGAGAATA	1740
TCGTAGAGTT TTTGATAGAG TACAAGTGTC TGAGGATCTT GCTCAGCATT TTCCTTTTCT	1800
TGTTGAAGGG CGCTAGCGAT ACGAGTCAAG ACATCTTTTA CCTGACTGTT TACTTCATCC	1860
AAGTCTGCAT CAGCCTTGTT TGTGGCAGCT TTTAGATTTT CTACTTCTTC TGCCAAGGAT	1920
TGTCTGATTC CTTCTTCATG GATTTGTTCC AAGAGTTGAT TTGCCTTGCT CAAAAGACTT	1980
TCTACTTCTT CCTTGCTATC TGTCGAGAT TATTGGTTGC TATCTACCAT GTACTCCTAA	2040
AACAGGAGAG TTATAATCCA AGATTACAAG GCCTTACAGA AATAAGAAAT CCAGATAAGA	2100
CAATGTTTCT CCAAGACGCT ATTCGCTTCG CACAGCAGCA CGGATTCAAT ATGCTTTAAT	2160
TTTAAAGTTT AGGTGTCAAG ACCTCTTTT AGTGTGCCCA AAATTTAGAG AAGTAATCAA	2220
TCAACTAACT TTTATTTTT TCAAACTTTC AGTAACTGA CCTAAAGCTA ACTCAATCTG	2280
TCTTTGTAGA TGCTTCTGCT ATCAGCTAGA AGTTGATCTA CTTTGGCCAA GACTGCCTTC	2340
TCATCAAAAG TTCCAGGTTG ATAGTTGGAT TGCAGGGATG GAATCTTGTT TTTCAAAGCC	2400
GCTTCATATC CCTTAGTTTG AACCTTGATG TAGTGATTGT GGTGCGCATG AGGAATCACA	2460
AAACCTTCTG AATCTTCACT TATAATTGCA TTGGCATCAA AACCATGACC ATCTTCTTCC	2520
TCATGATGGA CATGTAGTGA CGGATTACTT AATACAGAAC TAGAAGAACT TCCTACCTCT	2580
TCCGTGTTAG AGTGTGATGG GGGATTGTTA AGAGATGACT TAGGAATATA GTGATAGTGA	2640
TCCCCATGTC TTAATATATA AGCATCACCT GTATCTCTGA CAATATCATT AGGGTTAAAG	2700
ACATATGTGG CTGCTAATTC ACCTGCCGAC AAGTCACTCT CAGGAATGAA ATGATAGTGA	2760
CCACCATGTG GTACTATAGT AGATTGAAAT AGAATATGAG CAAATTGATA AGGGGATTTT	2820
AAAGTAATTT CTAACAATGA TTTAGAACT ATGATGTGCT ATTCTAAATT CAACTCACTA	2880
TATATAACCA TCATCGGTAG TATAACGTCC CTGTAATTTT GCTACAGATA CTTCTGCACT	2940

1159

AGCTCCTTTA TCGTCTTTAC CATGTTCTTG TTTTGGCGA TTGATTTTCAT CTTTGTTCG	3000
TACATTTTCT GCATGAGCTT GATCTTTAAG GTAAACATAA TACTTTCCAT CTACCTTAAT	3060
AATATATCCT CCCTTAACCT AACTGACGAT ATCTTGATCT TTCGGCTGAT AGTTGGGGGC	3120
TTTCATTAAT AGCTCTTCAC TAAAGAGCGC ATCAAAAGGA ACTTTACCAT TATAGTAGTG	3180
ATAATGATCG CCATGAGAAG TTACATAACC TTGATCTGTA ATCTTAATAA CAATTGTGTT	3240
TGCTTGAATT CCTTCTTTTT GACTAACCTA GTCTGGAGTC AAATTTTCAG TCTTCTTAGT	3300
GTCTTTATTA CTGTTTACAT ATGAAACACG ATTTTATCT GTATTGGCCT GTTAGCTATG	3360
TTGGTTCAGA GCATAAACAC ACAGACTTAA GGAAAGGATA ACAACAGATC CAGCTGCTAT	3420
ATATTTCTTT TTAAATTTC AATTACCTC ATTTCTATAA TTATTTATAT GATGTCTTCA	3480
TTATTAAATG ATTAAATAA TTAATTAACC AATTAATTA CTAGTAAATA TTCCACCTCT	3540
TTTTAAGTTG TATGTCAAGA AATTTTATAT ATTAATAATA AAATGAAATT CTCCCAAAGT	3600
CAGAGTTTAA TTTCTAACTT TTGAGAGAAC TTCATTTTGT ATTCAGACTT TTTCTACTGC	3660
TATTCCTTAC GCTATGAGAT CAGATAAATT CTTTTTATC ACTTCTCCAC TTGGCAATCT	3720
TAATTCATC GTTCCATCCA TATTGAATAT AACACTATCT AAGCCTAATC CGTAACTAGC	3780
TGTAAATTTT TCTAATTTT CTTGTACAGG ATCTACTGCT GGAGCTTCCT CTAATGCTGG	3840
ATCTAACATA GGGTCACTCC CCACATTCCC TTCTGGATTC AACATTCCAT TATCCGTTGA	3900
GTTTTCTGGT TTTACAGGT TTTCTGTTGG TGCTCTGGT AAAGAATCTG CTGGTTTATT	3960
TTCTGTGGT TGGTCTCAA CTGTTCCAGT AGATACTTTT CCATTTTCAG ATGGTTTATT	4020
TTCAACATTT CCTTGAGGTG CTTCTCCTGT AAAATCTGCC ATATTCTTTT TAATGACTTC	4080
TCCCGATGGT AAATATAATT CAATTGTTCC GTCCATATTA AACAAGACAT TTTCTAGCTT	4140
CATCCCATAA CTTTCAGCAA ATTTTGCTAC TTTTCTTGT ACAGGATCCA CTGTAGGAAC	4200
TTCTTCTAAC GTTGAATTAC TAGTACTATT CCCAGTTTCA GAAAGTTTTT CTTTTTCTAC	4260
CTTCTCACTA GTCTTTGGTT CTTCTACCTT TTCATCAAGT TTTAAGTTTT CTTGTGCTTT	4320
ATTCCTTTTA AATTGTGGTA GAATACTTGG TTTATCAGTT TGATTTTCTT TTTCCAAGAT	4380
AGGTACTTCC ACAATATAAG TCGATTGATT GTCCAAATAA GCATTTGCCA TGAAGGTTAC	4440
AGGAATTTTA TTTCCGGCCG TTCTGGTTGT TCCTTGGTTT AATTTTCGAA TCGGTAATTT	4500
GATTCACCA ACTTTATAGT TATTTTCTAA ATAAGCATTT CCATGAAATT CATCAAACAC	4560
TCTGACTAAA GCATCAGTTC CTTTAGGCAC TGCAAATGA GGGTTCCTC TTAAATAAGT	4620
ATCCCTGCA TGGAAAGGAT AGAAAATCGT TTGACTGGCC ATTTTGTAAG CTAAAGAGGT	4680

1160

TGGAAGCTGTA AATGTACCAT CATAACTTAC TTCTGGATAA TCTTTTGAAG CGATAGTATA	4740
CTTAAATGTT TGTCCCTGGTA AATAAGGTTG ATCTAATTCA AAGTTTGCAA TATTCCCTAC	4800
TCCTTCTCCA AATACTTTAC CAGATACTTT CTCCAATACT TTTCCATCTG GTGTTATTAA	4860
TTTTACTAGC ATATTGATAC CTAATTTTTT CTCCAATTCA GGCGGAAAAC TAAAAGAAAC	4920
GCGTTTTTGA CCATTGGCTA GAGTAAAGTT TTGATTATTA AACGTACTAT TTTTAAACAA	4980
ATTAACAACA TTCGTAAATT CTTCTCCAGT ATAAACTTTA TTCCCTTCTT TTTTAGCAAC	5040
TCCTTCTTCG GGTTTAAACA GTTCATAGTT ACTGTGAGAA TGACCAATTC CAACCGGTTT	5100
ATGTTTCATCA ATCGGATCTG CATGATGGTG ATCTCCATGC GGATAAAATA TCGCATTTTT	5160
TTCTTTATTC ACGACAATAC TTTCACGTTT GACACCATAT TGTTTCATAA TGCCAGCAAT	5220
TTTTTCTTCG ATTTTTTTAT CTAATCTTT CATTTCTTTG GCATTACTTG GATAATCCTG	5280
TTTCATGAGAT GACAAAGAAT CTAATCCATT ATGACTAGTT TTAACCTCCT CTAATGTTT	5340
TTGCGCAsCT TAATTGCTC TTCTGTCAAG TCCTTCTTGA AGAAATAATG ATTGTGGTCT	5400
CCGTGACTCA TGACAAAACC TGATTCATCT TCAGCGATAA TACGATTAGC ATCAAATCCG	5460
TATCCATCTT CTTTCATGTTT CTCATGTGAA GTTCTCGGAT TGATTGGAAG AGATGGAGAA	5520
GGTGTGTGTA GACTATTGTT TGGAAGAGTC GGTGCCCCAA TTTGATTTGA TTTTGGAATG	5580
TAATGGAAAT GATCACCATG TCTTACAATA TAAGCTGTAG CCGTTTCTTC AACGATATCT	5640
TTTGGATTAA AAATATAACC ATCAGATGCT GAAGAGAGCT CCTTACTTGT CGTTAAAGAA	5700
GAAGGATTGC TTGAAAGACT GCCTAGACTA GACACTACTT CATTAGGTTT TGCATTGTGA	5760
GAAACTGTAG AACCAGTTCC ACTGATAGGC ACCATTCTGG CAATCTTTTC TTCTAAGGCA	5820
GAAAGCTTGC TGTAAGGAAT AAAGTGGTAA TGGTCGCCAT GCGGAATCGC AACTCCATTT	5880
GGTGTACGAC TGATAATCTT AGCAGGGTCA AAGACCAGGC CATCTGATTC ACTGTAACGT	5940
TGGGCGCTAG GTGAATCATA GAGTTCCTTC AAAAGACTCT GGAGATTTTC AGATTTATTT	6000
GCTGGCTTGC TAGTTGATCC TTTTGCTACA GATTGCGTGT TATTGTCACT AGCTGTTGAA	6060
GAATAGCTTA ACTGACTCGG TTGCATATTT TTTCCAGCCA GATGTGCTTT AGCTGCTGCT	6120
AATTCACCTAG CAGATAAATC GCTTTTGGGA ATGTAGTGAT AGTGACCTCC ATGAGGAACG	6180
ATATAAGCAT TACCCGTATC TTCGATAATA TCAGCTGGAT TAAAGACATA ACCATCATTT	6240
GTCGTATATC GTCCCTGAGA CCTTGCTACA GCAACATTAG AGTTAACCTT CTCATTATCT	6300
TTGACATGTT CTTGTTTTTG ACGATTGATT TCATCTTTAG TTCGAACATT ATCAGCATGA	6360
GCTGCATCTT TCAGGTAGAC ATAATATTTT CCATCGACCT TGATGATATA ACCACCCTTG	6420
ACTTCATTGA CAATATCAGC GTCTTTAAGT TGATAGTTTG GATCCTTCAT CAAGAGTTCT	6480

1161

TCACTAAAGA GGGCATCATA AGGAACTTTC CCATTATAGT AATGATAGTG GTCACCGTGT 6540
 GACGTTACAT AGCCCTGATC TGTAAATTTG ATTACAATTT GCTCAGCCTG AATTCCTTCT 6600
 TTCTGGCTAA CCTGGTCTGG TGTCAAGTTT TCACTTTTCT GACTTGACTG GCTGCCATCC 6660
 ACATAAGAGA CACGATTATT GTCCTTATTT TCCTGCGAAC GATGCTGGTT TAGTGCATAG 6720
 GCACATAGAC TCAAGGATAC GATAACAGCT GATCCAGCTG CTATATATTT TTTACTAAAT 6780
 TTCATAAATC CCTCATTTCA ATAAATGATG AAGTTTTCCT TCAACTTCTT TTACTTTATT 6840
 AAATAGTTTT CTAAACCCGG GGGTACC 6867

(2) INFORMATION FOR SEQ ID NO: 193:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 999 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 193:

CGTTCTAAAA ATGCAGTACG TTTGATTGAG AAATCAGTTA AAGGTATGCT TCCACACAAT 60
 ACACTTGGAC GCGCTCAAGG TATGAAGTTG AAAGTATTTG TTGGAGCTGA GCACACTCAC 120
 GCTGCACAAC AACCAGAAGT TCTTGACATT TCAGGACTTA TCTAAGGAAA GGAACAATAA 180
 AGTATGTCAC AAGCACAATA TGCAGGTACT GGACGTCGTA AAAACGCTGT TGCACGCGTT 240
 CGCCTTGTTT CAGGAACTGG TAAATCACT GTTAACAAAA AAGATGTTGA AGAGTACATC 300
 CCACACGCTG ACCTTCGTCT TGTCAATCAAC CAACCATTCT CAGTTACTTC AACTGTAGGT 360
 TCATACGACG TTTTCGTAA CGTTATAGGT GGTGGATACG CTGGTCAATC AGGAGCTATC 420
 CGTCACGGTA TCGCTCGTGC CCTTCTTCAA GTAGACCCAG ACTTCCGCGA TTCATTGAAA 480
 CGCGCAGGAC TTCTTACACG TGAATCACGT AAAGTTGAAC GTAAGAAACC AGGTCTTAAG 540
 AAAGCTCGTA AAGCATCACA ATTTAGTAAA CGTTAATTCG AAAGAATTAC TATACTTATA 600
 CAGAGCACCT TTCGGGGTGT TCTTTTTTTA TACTTTCTTA CTAAATGGT GCAATGACA 660
 CAGTTGTTGC GACTTTAGTC GCTTACAAAT GTGGCTGCAA CCTGACATGG TCAGTTGCCT 720
 CAAAACGTTA ATCAATACGA TTATATCAAC GTTTCAAAGC ACTCAAGGGT TTACCCTATG 780
 GGTGCTTTTT TCTATACTTT CTAAAAAGT TTACCCTAAA ATTTGCCCTA AAATTACCCT 840
 ACTTATTTTT AAGATGTTGG TAGGCAACTT GTCCAGCAGA TAATGGAACT ATGTTTGAAG 900
 TATTAACATA AGTCTTAGTT GTAACGGTAT CGCTATGAGT TAATGCTTCA GAAATGGCTT 960

1162

CTAAGCTCAT TCCTGCTTTT TTAGCAAGTG TCGCTCCTG 999

(2) INFORMATION FOR SEQ ID NO: 194:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2315 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 194:

AATATTATCA CTGTTCTTGA AGGCAGAACA CAAGCTGTCA TCCGAAATCA CTTTCTTCGC	60
TACGATAGAG CCGTTCGTTG TCAAGTGAAA ATCATTACGA TGGATATGTT TAGTCCTTAC	120
TATGACTTGG CTAAACAGCT TTTTCCGTGT GCTAAATCG TTCTAGATCG TTTCCATATT	180
ATCCAACATC TCAGCCGTGC CATGAGTCGT TTTCCGTGTC AAATTATGAA TCAGTTTGAA	240
CGAAAATCTC ATGAATACAA GGCTATCAAG CGTTACTGGA AACTCATCCA ACAGGATAGT	300
CGTAAACTCA GCGATAAACG TTTTATCGC CCTACTTTTC GCATGCACTT AACAAATAAA	360
GAAATTCTTG ACAAGATTTT AAGCTATTCA GAAGACTTGA AACACCACTA TCAGATCTAT	420
CAACTCTTAC TTTTCACTT TCAGAACAAA GACCTGAGA AATTTTTCGG ACTCATTGAG	480
GACAATCTGA AGCAGGTTC TCCCTCTTTT CAGACTGTCT TTAAAACCTT TCTAAAGAAC	540
AAAGAGAAAA TCGTCAACGC CCTTCAACTA CCCTATTCAA ACGCCAAATT GGAAGCGACC	600
AATAATCTCA TCAAACTTAT CAAACGCAAT GCCTTTGGTT TTCGAACTT TGAAAACCTC	660
AAAAAACGGA TTTTATCGC TCTGAACATC AAAAAAGAAA GGACGAAATT GTCTCTTTCT	720
CAAGCTTAGC TTTTCTTCAA CCCACTACAG TTGACAAAGA GCCTATTTTC GCTGATTCTC	780
CACTACATTT GACTGGATTC TAATTTTTTA GAGAAATACA AAAGAGCTAG CTTTAGCTAG	840
CTCTTTTCTT ATGCGGAGAG AGGGACTTGA ACCCTCACGA CCTAAAGCGG TCACAGGATC	900
CTTAGTCCTG CGCGTCTGCC AATTCGCCA TCCCCGCGTC GATTACTTTA CTAGTATATC	960
AACTTTGGG ATGCTTGTC ACACTTTTT TCAAATTTTT TCATTTTCAC CAACCAGGT	1020
ACTCAAAAAG TTCATTTAGA TTTTCATCTA CTAACCTAGC TCCGAGTGT TTTTGAAAT	1080
GACCTAGGGC AAATTGATGA TTTTCAGGCC AGATGGAAGC AACAGCTGGT TTAACAATCT	1140
CGATGTCATA TCCTAGATTA TAGGCATCTA TAGCTGTATG TAGGACACAG ATATCCGTCA	1200
AGACACCTGT TAAGATAACG GTAGACACTC TACGCTCTCT CAAACGAATA TCTAGGTCAG	1260
TCCCTGAAAA AGCTGAGTAA TGGCGTTTAT CCATCCAAAA GACACGACTG TCTGAACCAT	1320
GCTCTTGATA AAAGATCCCC AAATCTCCAT ATAAATCCG TCCACTCGTC CCAATCAGAT	1380

1163

TATGAGGAGG AAATAACTTA CTTTCCGGAT GGAAACAATC GTTTTCTTCA TGAGCATCAA	1440
TAGTAAAGAA GATATAATCT CCTCGTTCAA AAGCTAATCG AGTTACCTTG CTGATGGCAT	1500
CCGAAATCGC CTGAGCTGGA GCACCTGCTG TTAGTTTCCC ACTATCAGCA ACAAATCTT	1560
CTGTATAATC AATCGAAAT AAAGCCTTTG TCATTAGTAA TCTCTTTTCT TCACTTCTTC	1620
AAAAATATCT GAAATCAAGA CCTTAAGATA GGTTCCTTC ATTCCAAGTG AGCGACTTTC	1680
AATAATCCCC GCAGACTCAA GTTTACGAAG AGCATTGACA ATCACAGAGC GAGTGATTCC	1740
GATACGATCT GCAATCACTG ACGCAGTCAA CTTCCTTCA TTTCCATTTA ATTCCCCTAA	1800
AATTGCTGAA ACAGCACGGA GTTCGGAGTA AGAAAGGGTA TTGACCGCCA TGGTGACAGC	1860
AGTACGACGA CGAATATTTT TCTCATCTTC TTCACGTGG AAGTTAAGAA GCTGAATCCC	1920
AACAACGGTA CTGGCAATCT CAACAAGAAC CAAGTCCTCA TCTTCGAATT TTTTATCATT	1980
ACGCCAAATA ATCAAAGAAC CAAGGCGAAT CCCCATAACA TGAATCGGTG CAATAGTCGT	2040
CAAGCCATCT GGAAATCAT CTCTACTCTC AATAGGGAAA ATACTCATAT CATGCTCAAC	2100
AGGCAAGTTT GCTTCTGTTT CGTAAATCAT ATTAGCCCCT TGAACGTAGT CATCTGGGAA	2160
AATCTTAGTT TGGAAGAATT GCTtACGCGA TCTGTATTTG TTTTATAACG CATAAAATAG	2220
CCAAGCAGAC GTCCCTTACT ATTGATAATG CAGGCATTGC AATGAATAAT ATCCGCTAAC	2280
TGACGCGTAA TAGCGTTGTA AGGGAGCTCA TCTCG	2315

(2) INFORMATION FOR SEQ ID NO: 195:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 6693 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 195:

CGATTCTTCA CATTTCTTCA AATAAGAATA CTTCATCTGA CATATGTGTT ACCTTCTTCA	60
TCAAAAATTA TTTTGTAATC GATTACATTG CAGATCGTAA CATAAAGAAA AACAGATGTC	120
AAATATTAAA CGTAAAAACA TGGTCACTAA AGAACTATAA GAGAAAAGGT AAACCTAGCG	180
ACGCGATGAA CGCTGGGTCG TTTGGTTTCG ATTGCTCTCT TCCTCTTGTT TTTTCTGTTC	240
TTCTTCTTGT TTTTCTCAG CTTCCTTGGC CTCTTGTTG GCTTTTTCCT CAGCTTCCAT	300
AATTAATTTA TCCGCCACAG TGTAGCTGTA GATTCCAGCT TCCATGTCGA CCACACTCGG	360
TTCTGACAAAT TGAGGCTTAA TCTTACTGTA ATATGGCAGT TTCTTACTCA TTTTACATAG	420

1164

AGGAACCAAG ACTTCGTCCG AATCATTCAT GGTCAATCGA ATTAAATCGG ATGTCACCTT	480
GCTTGGGGCT AATTCCACCT TTTGGATAGC CGCCTTGAGT TCTGGGCTAA TTTGAGCAAG	540
TTCTGAGACA AAAACTTTGA TTTGTTCACT ATCATTAAG AGAACTGATA AATAAGTTTC	600
TGGTAAACTG TTCAGACTCA CAGAACTAGT CTCAAGCTGA CCACTGGAAA GAATAGGATA	660
ATGATTTTCA CCAGAAATAT AGTAGGCCAC AATATCATAT TCCTTGACCT TAATAGTGAA	720
CTTAGTTGGA AATTGATAGA CAAGTTGAGC TGATTCAACC CAATAGTTAG ACTTAATCTG	780
CTTTTCATAT TTTCCTTGT CTAGCAGAAG GTTAATCGTA TAATCCGAAT CCTGAATGCC	840
TGAAGCCTGT CGAATATCAT CAGCTGTAGT TTGCACCGTT CCCTCAACAC GAATATCTTT	900
CATGGTCGCA TAAGGACTGA GCAAGTAGGC AGAGACAAAC AATAGAAGCA GACTTGGAAA	960
TAAAATCGTG AAGGCTCGCA AGATATGGAT ACCAGGAATC TTTGCTTTGG CTGGTTTTTC	1020
CTTTGTAGCC TTTTAGCAA GCTTTTTATC CTGTTCTCC TTCTCTTTAG ACTCTGGTTC	1080
TTCTTTCTCT TCTTTCTCTT TGTGAGCTC TGAGGATGCT ACTTTTCTT CAGACTCTTC	1140
CTTAGCTGAT TCTGAATCTT CCTGGTCTGT TTCACTCTCC TGGTCCTGTT TATCCTCTGA	1200
CTTCTCAGAT TCTTCTCCCA TTCGAGCTTG TCTTTCCTTT TCCTTCTCCT CAGCTAGAGC	1260
CGCTCTTCT TCAGCCTTCT TTTTAGATA TTCTTGGTTT CGTTTCTGCC ATTCTGATAA	1320
CTCTTTCAAT TCTTCGAGGG TTTCTTTGTC CTCATTTTTT TTATCTTTTG ACATTTACTT	1380
TCCTTATGAT AAATCTTTTT TCAACAATTG ATAAAAATCT GCTAGAGATT TCAATTCCTT	1440
AGAAGCTTTC ATCTTAGCTT GGTAATCTTC CTTGTGACTT AGTAAGTGAG AAAGCTTCTC	1500
TTCCAAACTA TCCAAGGTCA AATCGCTTTC TTGAAGGTCT TCTGCATAGC CTTTCTTAAC	1560
AAAGTAAGCT GCATTTTCAA TCTGGTCACC ACGACTAGCT TCACGACCAA GCGGCACAA	1620
GACATGCAAT TTTGCTATCG CCAAGAGCTC AAAAATCGTA TTGGCACCAC CTCGTGTCAC	1680
AACAATATCA GCCAATTCCA TCAAGGGTTG ATAGAGATCG GTCACATAGT CAACACGAAA	1740
AAGATTTTGC CTCAACTCAT TCAGACTAGA ATCTCCAGTT AGATTGATAA TATTGTAGCG	1800
CTCTGTTAGT TCTTCTTAT GGTCTGTCAC CAATTGGTTA AAGACACGAG CGCCTGCAGA	1860
ACCGCCAACA AACAATACAG TTGGCAATTT GGGATTAAAG TGGGTTTGAA TATCCACCAA	1920
TTCATCTGGT TCTGGAGTGT TTTTGTCCGA AACCTTGGTC ACCGCTCCCA CATGCTCAAC	1980
CTTAGCCAAA CTCGAAGCTT GTTCAAAGGT TGAATACATC TTAGTCGCAA ATTTATAGGC	2040
GATTTTATTG GCCAAGCCCA TAGACAGGTC AGATTCTGTA ATAAAGACAG GCACTCCTGA	2100
CACACGCGCA GCGATAACAG GCGGTACTGA GACAAAGCCC CCCTTTGAAA AAAGGGTCTG	2160
TGGACGCAGT CGCAACATGA TAAAGAGCGA TTGGACAATT CCCCACCAA CTTTGAAGAC	2220

1165

GTCCAGCATA TTTTGCCAAG AGAAATAGCG ACGCAATTTT CCAGTCGCAA TAGAATGGAA	2280
GGTGACATCC AAACCTGACT TAAGGATTTT TTGGTGTTCG ATACCACACT TGTCCCCGAT	2340
ATAGTGGACT TCCCAACCAT CTTGATGAA CTTGGGCATT AACAAAAGAT TGAGGGTAAC	2400
GTGTCCAACC GTCCCCCAC CTGTAAAGAC AATTTTTC ATATTATTCT TTAACTCCG	2460
CTACTGTGTC GATAAAGAGG TCGCCACGTA CTTCAAAGTT AGCATACATA TCCCAGCTAG	2520
CATTGGCAGG ACTAAGAAGA ACCACATCTC CTTGAGTCGC AAGCTCATAG GCCTTGCGGG	2580
TCGCATCTGC AATATCTGTC GCCTCCACAT AAGCGACACC AGCCTTGTCT GCTGCCCGTT	2640
TGACACGTTT TGCAGATTGA CCCAGGATGA CCATCTTCTT GAGTCCAGTA ATGTCTGGCA	2700
CCAATTCGTC AAATCATTG CCACGGTCCA AACCACCTGC AATCAAGACG ACCTTGCTGT	2760
TGTCAAATCC TGACAAGGCT TTTTGAGTAG CCAAGATATT AGTTGATTTA CTGTCGTTAT	2820
AGAATTTAAC ACCCTTGATG TCATCCACAA ACTGGAGACG GTGTTTGACA CCACCGAAGG	2880
CTGAAAGAGT TTCCTTGATG GTTTGATTGT CCACATCAGG AAGCTTGGCT ACAGCAATAG	2940
TCGCAAGGGC ATTTTCCACA TTGTGGCTAC CTGGAACACC GATTTTCATTC GCTGCCATGA	3000
CTACTTCACC ACGGAAGTAG AGTTGACCAT CTTCCAGATA AGCTCCATCA ACCTTTTCAA	3060
GTGTTGAAAA TGGTACAACA GTGGCTTCTG TCTTGAAGT CAAGTCTTTT GCCAAGTCTT	3120
GATTAAAGTT CAAGACAAGG AAATCAGCTG CTGTCATCTT GTTCTGGATA TTCCACTTGG	3180
CTGCTACATA TTCCGAAAAT GACCCATGGT AGTCGATATG AGTTGGCATG AGGTTGGTAA	3240
TAACCGCAAT CTCTGGATGG AATCTTGAA CACCCATGAG TTGGAAAGAA GAAAGTTCCA	3300
TAACAAGCGT GTCCTTATCT GATGCTATTT GAGCAACCTG ACTAGCTGGA TAGCCGATAT	3360
TCCCTGATAA AAGACCATGT TGGCCAGCAG CAGTCAAAAC TTCCCCAATC ATAGTCGTTG	3420
TGGTTGTCTT ACCGTTTCGAT CCTGTGATAC CAATAATCGG TGCTTCTGAA ATCAAATAAG	3480
CCAATTCAC CTCAGTCAAG ACTGGAATTC CCTTGGCCAA AGCCTTTTCA ATCATGGGAT	3540
TGTTGTAGGG GATACCTGGA TTTTTCACCA TAAGGGCAAA CTCTTCATCC AAGAGTTCCA	3600
AAGGATGGCC ACCTGTAATG ACCTTGATCC CTTCTTCCAG CAAACTTTGG GCAGCTGGAT	3660
TGTCCTCGAA AGGTTTCCCA TCATTTACTG TCACAATGGC ACCTAGCTTG TCCAACAAAC	3720
GAGCTGCAGA TTCACCAGAC TTGGCCAAAC CTAAACAAG GACTTTCTTA TTTTAAATT	3780
GATCTATTAC TTTTATGTCT CGAACTCCAT TTCTACTCCT ACTATTTTAC CATTTTATG	3840
GAAATAAAAA AGCCACAAAG TGTGTTGTG ACTCTTCTT CTAAGTGAAT CTTACCATAT	3900
CATCTATGTG ATAAATCGGT AACTCGAATG ACCTGATCCA CTTGCTCCCA AATCAGAGGA	3960

1166

TTATGGGTCG CAATAATAAT GGTCCGATTC GGATTTTTTA AAGATTCTAG GATGGAAAGT	4020
AATTCCTCAG AGTTTTTGGG GTCTAAGGAA GCGGTGGTT CATCTGCGAG GATCAAAGGT	4080
GGATCCTTTA AAATTATCTT CGCTAGTGCA ACACGTTGTG CTTCTCCTCC TGATAACTCA	4140
AATATAGGTT GCTTCAAATC CAAATAAGAG AGGTTTACAC GGTTTAGAGC TTGTTTCATC	4200
AAAGAGATTT TCTCTTTTTC CTTCAACTTT TTACCAACTA AACCAGATT GAGATTCTCT	4260
TTGACGGTTT GGCTTTCAAT TAAGCCAAAA TCTTGAAATA AGTATCCTAA GTAATCTCTA	4320
AAGAAAACAG AAGGCTTGAT GTCCTTAAGA GAAGTGCCAT CATAGATGAT TTGCCCTTTG	4380
TCATATGGCT CCAATCGTCC AATCATATTC AAGAGTGTG TCTTACCACA GCCACTTGTA	4440
CCGATTAAGG CATAAATTTT CCCACCTTCA AAATGAAGAT TCATATCTGA AAATAGCTGA	4500
CGGCTTCCAA ATTTTTTAGA TATATCTTTT AGTTCAATCA TCCTATTTTC CTTTCATAAT	4560
TGTCATAGAA ACACGAGATT CTTTCTGCGC TTGACGGTAA AGCGTCAAAA CTGCAC TAGC	4620
TAGAAAGACC AATAAAGTGA GCAAGCCAAT CACCAAGTCT CGACTGCTTA AAATAAAGAG	4680
ACTAGCACCA AATACAAAAC TAGCAAATTG GCTAACCATA TACTGAGCAT GTGTTTCAAA	4740
AAATCGTAAA CCTGAAATTC GTTTAATCAA GATATCTCGG CGGAATTGCT CGAAATATAG	4800
AAGATTGACA GAATAAAAGA GTAACAAGGA ACTGGCTATT CCAACAATAG CTCCTAAGAT	4860
TAAAGTTGCT GTTTCAGTTT GAAC TTCATT ATAACGAGTT AGATAAACAC TTCTTCCTTC	4920
TTTAAGATAG GATACTTGCT CATAAATTCC AGCTTCTTC AAGAGTTCTA GCCCACTCTC	4980
ATATCCTTTG ATAAAGAGTT GTTTTCCAGC ATTGATAGAC CAACTAGATA AGGATATAAA	5040
ACTATCACCT GTAGAAGTCG GCGTGAATAC CACTAAAATC GGATCAGTCA AATACTGAGT	5100
AGATACGGGA TTCTCACCGT TATTATAAAC AAACCGCTTT TCTCCCATTG AAAGATAACT	5160
AACGTGCGCT TTCATCTCAT AATCCAAAGG AGCACTTGCC TCCTCACCAG ATTTTCCATA	5220
ATAACTCAAT CTTTCTTCAA AAAC TTCTT AAGTTCTGCT TCTCGAGAGC GCAAATGTTC	5280
TGGGAGCAAG AGGATAAACT CACCTTTTTG GAGATGGGCT AAC TTCTGTT TGGTCTCAGC	5340
ATCTACCACG ACCTTTTCCT TGTCCAAATA ACTGGGACTA ACATAGAGCG TATTAGCATC	5400
TGAACTATAG GTATCCAGTG TCTCTCCCTG TTCATTTTTT CTTGTGGAT TGGCAAAATG	5460
GAGCAGATTA TCCTTTACAT AAAGAGCTTG TTCTTCTTCG ATTGCTTCCT TGGCAAAGGC	5520
ATACCACTTG CTCTGATTTT CTGTATCTTT TCCTCTATCA CCTAAGCCAA AGGAAATCTG	5580
GTAATAGTCT GCTCTGCTCT GCCATGCTTG TTTTGAAATT TCAAGTTCTT TCAATCGTTG	5640
GTAAGACGTC AAACCTGTCT TAACAGCGTA GCCTACTGTA AAAACAGCTA CTAAGTACA	5700
CAATAGGGTT AAAGCCATCA AGCGTTTAAG GGGTAATCTT CCCTTAATAA CGGGAATAA	5760

1167

TGCTTTGTAA CTCAAACCTCA TTAGGTAAAG GAGCATTAGT AAAATTGAAA TCGCCAATAA	5820
AAACAACAGA TAGAAACTAA TCCCAAAACC ATAGGTGGCT AACAGATAG GATAAAACAA	5880
ACCTTGACTA AAAAGAACGA CTCCCCCACC TAGGAAGGAA AGGAGGGCTG ATAGAAGGAG	5940
CCATTTGATA TCAGTAGATA AAGAATGCCC CATGATGGAT AAGAGAGTCT GACCAGAAAA	6000
GAGTTTTATA CCTGCTGCTC TCATTTCTTT AATCCGAGTG ATAATCACTA AAGCAAAGAA	6060
AGATAAGCCA AATATTGCTA AACTAATTAA AATAAGGGA TTTAGTAATA TTCGAAAAGC	6120
AAGAAAATAG GCGGTATCT TTCGGTCAGC ACTTGCTTTA TAACCCAAAT CTCCTAATTT	6180
ATCGGCAAGC TTTTCTTTCG TCAAGGAGCC TGACAAAAGG AGATAACTAT TTAGCGGAnT	6240
AtACGTTTAC GACTTTCTTG GCTAGCTTCT TGGAATTCTT TTGGTAAAGT TCCCTGACCA	6300
TAAGTTGCAT AAGTAAAGTG AGTCGTCCCA TCCTTACTCG GCTCTACAAT TCTTCTAGCT	6360
ATTAAACTCT GTTCTGAGTT TGCAAAATTC TCCAATTCCT GTTCAAATAC CTCACGCGTC	6420
GGTTCTGAG TATCTTTTTT GACACGAAGT AAAGAAACGG AATCATAGCT TGCATATAAA	6480
TATTGTGGCG CACGTAAGAC AATAATCCAA GCAAGGAAGA AGCTGAGAAA AAAAGTTGAT	6540
AATAATATGA ATAGTTTCTT CATAGTAGAC TCCTTGTAAG CAAAATTCCT CCTGTAATTT	6600
CTTACAAGGG GAACGATTTA AATCAATGAA CGATTAGTCA TAATCACAGT AAAATGCTAC	6660
TTGTTCTCCC CATTTAGTCC AAATCCATGC AGG	6693

(2) INFORMATION FOR SEQ ID NO: 196:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1847 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 196:

CCGGTCTATG TACCACTAC TTTGGGACAA TATGGGGATC AGCTACCCAA AACTAATCGA	60
GCGTTTGGTT GACCTTGCCA AGGAAAGTTT TGACAAGCGC GACGATTGA TATAAAATGA	120
AAGAGAGGGT AGAAGCCAGA ACCATCACTG CACGGTGAAT AGAGTTCTCG GACTTCAGCC	180
CTTTTAAAG GAGTAGAAAT GAAATTAACA ATCCATGAAA TTGCCCAAGT TGTGGAGCC	240
AAAAATGATA TCAGTATCTT TGAGGACACC CAGTTAGAAA AAGCTGAGTT TGATAGTCGT	300
TTGATTGGAA CTGGAGATTT ATTTGTGCCA CTAAAGGTG CGCGTGATGG CCATGACTTT	360
ATTGAAACAG CCTTTGAAAA TGGTGCAGCA GTAACCTTGT CTGAGAAAGA GGTCTCAAAT	420

1168

CATCCTTACA TTCTAGTAGA TGATGTTTGG ACAGCCTTTC AATCCTTAGC ATCCTACTAT	480
CTTGAAAAAA CGACTGTTGA TGTCTTTGCT GTTACAGGTT CAAATGGCAA GACAACGACT	540
AAGGATATGT TGGCGCATTT ACTGTCAACA AGATACAAGA CCTACAAAAC ACAAGGCAAT	600
TACAATAATG AGATTGGCCT TCCTTACACA GTTCTTCATA TGCCTGAAGG AACAGAAAAG	660
TTGGTTTTGG AGATGGGACA GGATCACTTG GCGATATTC ATCTCTTGTC TGAATTGGCT	720
CGTCCAAAAA CAGCCATCGT GACCTTGGTT GGAGAAGCCC ATTTGGCCTT TTCAAAGAC	780
CGTTCAGAGA TTGCTAAGGG AAAAATGCAA ATTGCAGACG GAATGGCTTC AGGTTCTTG	840
CTTTTAGCGC CGGCTGACCC TATCGTAGAG GACTATTGTC CAACTGATAA AAAGGTGGTT	900
CGTTTTGGGC AAGGGGCAGA GCTGGAAAT ACTGACTTGG TTGAGCGCAA AGATAGTCTG	960
ACCTTCAAGG CCAATTTCTT AGAGCAAGCC CTTGATTGTC CAGTAACTGG CAAGTACAAT	1020
GCGACAAATG CTATGATTGC ATCCTATGTT GCCTTGCAAG AAGGAGTTTC AGAGGAGCAA	1080
ATTGCTTTGG CCTTCCAAGA TCTTGAATTG ACGCGTAACC GTACCGAGTG GAAGAAAGCA	1140
GCCAATGGAG CAGATATCCT GTCAGATGTT TACAATGCCA ATCCAAGTGC TATGAACTG	1200
ATTTTAGAGA CTTTCTCTGC CATTCAGCC AATGAAGGTG GCAAGAAAAT TGCAGTGTG	1260
GCGGATATGA AGGAGCTTGG TGACCAGTCT GTTCAACTTC ATAATCAGAT GATTTTGAGC	1320
CTTCTCCAG ATGTGCTTGA TACCGTGATT TTCTATGGAG AAAATATTGC TGAATTAGCC	1380
CAATTGGCCA GTCAAATGTT CCCAATCGGC CACGTTTACT ACTTCAAGAA AACAGAAGAC	1440
CAGGATCAAT TTGAAGACCT AGTCAAGCAG GTCAAGGAAA GCCTTGAGC CCATGACCAA	1500
ATCCTGCTCA AAGGCTCTAA CTCTATGAAT CTAGCCAAGT TGGTAGAAAG TTTAGAAAAT	1560
GAAGACAAGT GATTTTGTCA AGTATTTGCA AAGAATGATT GCCATTACAG ATACTGGCTT	1620
AACCTTTACA AAAGATCCGT TTGACCGTGA GCGCTACGAA GACTTGCGAA GTCTGTTATC	1680
TGAAATGTTG AATCAAGCAT CAGACCTTGA TTCCGAAGAA GTGGCAGAAG TCTTGAAGCC	1740
AACTTCTGCT TATGCGACTC CGTTAATGGA CGTCCGTGCT TGGATTGTTG AGGATGAGAA	1800
GATTTGTCTG GTTAGGGGAC AAGGAGAGGA TAGTTGGGCT TTGCCGG	1847

(2) INFORMATION FOR SEQ ID NO: 197:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1062 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 197:

1169

CAAGCGAAAA CATTTTTAT TCCAAATAAA CAGAGCATTT TAGGAGAACA AGAGATTTTG	60
AATGCCAAGT CGATCTTGGC CTTGCTAGAC GGTTCGAGT CACATAGCTA TGATGTAGTC	120
TATCTCCGTC AGCCTCTTAA TCGTCTCGAA TATATCGAGT GTGCGATAGT GGGGCAATCA	180
CAATTTCTCT TTAAGGTCAG TTATGCTGAT GGTCAAAGG CTTACCGTGT CGATCTTCCT	240
GACCTACTAA CAAAGACAGA CTGGCAGATT ATCAAGTCAT TTTTAGATGC TTTGCTTGCT	300
TATACAGGGA CTGATATTGA AGGGCTAGAT GGTTCGATT TTGAAGCTTA TTTCCAAGCA	360
AGTATTCAG CCTATCTAGC AGACCCTGTA GCTCGTTTA CGATTTGCCA AGGAATTTTT	420
AATCCTATTT TCTTTAGTCG TGAGAACTTG AAAAGCTTTT TAGAGGCAGA TGGCTTGGCT	480
CAGTTGAAG CGCGTGTGCG TCGGTTCAA GAGACAGATG CCTACTTTCG GAGAGTTTCC	540
TTCTATCAGG ATGGAGAAGG AAAAGTGCAT GCGTTCACC ATCTAGCTCA AGGAGTCAAG	600
ACAGTTTAC CGAGAGAACC GTTGTTCCT GCAGCCTATA TTGAGCAATT GGTGGATAAG	660
GAAGTCCAGT GGGAGATTGA CTTGGTTCAA ATCACAGGAG ATGGCTCTAA ACCAGAAGAC	720
TATGAAGCCA TTGCTCGCTT GGACTATGCA AAATCTTAG AGGTATTACC CCCATCTTTT	780
TACCACCAAC TAGACGCCAA TCAAATAGAA GTGCAACCCA TATTAGACAA AGATTTTAAA	840
ACATTAGCAC AAGAAAAGTA AAGCAGAAGC AGGTCAATCG ACTTGCTTTT TTGACATAGA	900
AAAAATCCTG CCAAGaTGAC AGGATTGCTA CTCAATGAAA ATCAAAGAGC AACTAGGAA	960
GCTAGCCGCA GCTGTACTTG AGTACGGTAA GCGAAGCTG ACGTGGTTTG AATTTGATTT	1020
TTGAAGAGTA TGAAGTTTAA AGAAAAGCCA AGATACGAAG AT	1062

(2) INFORMATION FOR SEQ ID NO: 198:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 6846 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 198:

TATCTACAAC CTCAAAAACA TGTTTTGawG gCTCGTCAGT cTATCTACAA CCTCAAAAAC	60
ATGTTTTgAa kGctcGTCAG tTCTATCTAC AACCTCAAAA ACATGTTTTG AcaGcCtCgT	120
CAGTTCTATC TACAACCTCA AAAACATGTT TTGAGCTGAC TTCGTTAGTT TCATCTACAA	180
CCTCAAAAAC ATGTTTTGAG CTGACTTCGT TAGTTTCATC TACAACCTCA AAAACATGTT	240
TTGangnCnT CGTCAGTTCT ATCTGCAACC TCAAAGCAGT GCTTTgagcG CTTCGTCAGT	300

1170					
TCTATCTACA	ACCTCAAAAC	AGTGTGTTGC	GCAGCCTTTA	ATCAGCCGCC	TAGTCCGCTC 360
TATGGTATTC	ATTAAGTCAA	CATCTCTTGT	TTAAGAGCAC	CAAATCAGGA	AATCTTCTCG 420
ATTCCCTGAT	TTTTTCTATT	TACGTTTTTCG	TGTTGAGCTA	CGTTCTGTCA	AACCATGAGG 480
TAAGAGAACT	TCACGTTCTT	CCAACTCTTC	CTTATGCATA	ATCTTGGTCA	ACATACGCAT 540
ACTAATGGCA	CCAAGGTCAT	AAAGAGGTG	GGCAATCGTT	GTCAAGTTTG	GACGGGTAAA 600
GCGTGAGATT	TGTGAATCAT	CACTAGTAAT	AATTTCAAAA	TCTTCTGGCA	CAGAAACACC 660
CTTATCAGCC	AAACCGTTCA	AGACTCCTGC	TGCCAACTCA	TCACCTGTCA	CAACTGCTGC 720
AGTTGCATTT	GATGAAATCA	AACGCTCTGC	TAAGGCGTAA	CCATCATCAT	AGCTATATTT 780
AGATTCAAAT	ACCAAACCCT	CACTATAAGT	GATTCCTGCT	TTTTTCAAGG	TTTCCTTGTA 840
GCCAACTAAA	CGAACCTTAC	CATTGATGTC	ATCCACTAGC	GGACCGCTAA	CGAAAGCAAT 900
ACGCTCATTT	TCTTTAGCAA	GGTAACTCAC	TGCATCAATT	GTTGCTTGCT	TATAGTCAAT 960
ATTGACACTT	GGCAACTGGT	GCTCAACATC	GACAGTTCCT	GCGAGAACAA	TCGGAGTACG 1020
TGAACGCGAA	AATTCTGAGC	GAATTTTATC	TGTCAAGTGA	TACCCCATAT	AGATAATGCC 1080
ATCTACCTGC	TTTGAAAAGA	GGGTATTGAC	AACAGAAACT	TCTTTCTCGT	TATCTTCATC 1140
GCTATTAGCT	AGGACAATAT	TGTACTTGTA	CATTTCTGCA	ATATCATCAA	TCCCCTTAGC 1200
CAAACCTGAA	AAATAACCAT	TGGTAATATT	TGGAATCACG	ACACCGACAG	TGGTTGTCTT 1260
TTTACTTGCA	AGACCACGCG	CAACTGCATT	TGGACGATAA	TCCAAACGAT	CAATTACCTC 1320
TAGCACTTTT	TTACGGGTAT	TCTCTTTTAC	ATTTTATTTG	CCATTGACCA	CACGGCTGAC 1380
CGTCGCCATG	GAAACACCTG	CTTCACGAGC	GACATCATAA	ATGGTTACTG	TATCATCTGC 1440
ATTCATTCTT	TTTCTGTGCC	TTTCTATCTC	ACACATTCTT	TTACAAGTAG	AGGTACTGAT 1500
TGAAGCTCTA	TATCTACTTA	CAAAAGTGAA	GATGTGAAAA	TTTCGTTTTT	ATATTTCTAC 1560
TTATTCCATT	CTATCACTAA	TTGTAAACAC	TTTCAAGTGT	TTTTTGAAGA	TTGATTGAAA 1620
AAATTTCATA	GAAAACCTAG	GTTTAGCTCC	TTGCTACCAC	CTTAGACTAA	ACAAAAAGGA 1680
GGAAACTAAG	CCCTCCTAAA	GTTATAGTAA	AATGAAATAA	GAACAGGATA	AATCGATCAG 1740
GACAGTCAAA	TCGATTCTTA	ACAATGTTTT	AGAAGTAGAG	GTGTACTATT	CTAGTTTCAA 1800
TCTACTATAG	GTATTGTTCC	ATTCACTACC	GTCAATTTTA	GCACATAGTC	TTCATGAAAA 1860
TATTATATCA	TCATAACCAA	CCAGATTCTT	TCGCGATATT	AGCTGCCTCT	GTTGATTAC 1920
CTGCATCTAG	TTTCGAAAGA	ATATTGGTGA	CATAGTTTCG	GACTGTTCCG	TTGGATAGAT 1980
AAAGTTTCTC	TGCAATTCTT	TGGTTAGAGA	AGCCCTGAGC	AATTCCTTTT	AAAACGCGA 2040
TTTCTTGCTC	CGTTAATGGA	TTGGGATGCA	TCATCACCAC	TTCCATCAAT	TCAGGCGAAT 2100

1171

ACTCCTTGCG TCCTTCGAGG ACGGTGTGCA AGGTTTGCAT GAGGTCTGCA ATGTTTCTTT	2160
CTTTTAATAC ATAAGCATCT ACTCCAGCCT TGACCGCAGC TTCAAAATAC CCAGGACGCT	2220
TGAAGGTCGT CACCACAACC ACCTTTGTTT CAAGCTTTTC TGCTCGTATC CACTCCAAGA	2280
CTTCAAGACC TGTCTTAACA GGCATTCTA CGTCAAGGAT GGCGATATCT ACAGACTCCT	2340
TTTCTAATAG TTGGATTGCT TCTTGCCCAT TCTTGCTTG AAAGACAGAC TCTACATCCG	2400
GTTGAAGCAT GAGCAACTGG CACATGGCAT CTCGCAACAT ACTTTGATCT TCTGCGACTA	2460
ATACTTTCAT CTACTTTCTC TCCTTATAAA GTAGTCGAAC CTGCACTTCA GTTGGATGTT	2520
TCTGACTGAT TACACTTACT TCTCCTGAAA ATGGAAAAAC ACGATTTCGG ACTGTATGGA	2580
GCTCATCCCC GCTTATAGAG GCAAAGCCAC AGCCATCATC TCTCACTGTT AGAATGAGTT	2640
CTTCTCTGT CCGTTCTAAT TTCAAGTAGA CTTTAGACGC TTTAGCATGT TTGATGATAT	2700
TGGTCACTAA TTCAAGCAAA ATCATGGAAG CCGTTGACTC CAATTCCTGA GTTAAGCTAG	2760
ACTTGTCOA GTGATTCTCA ACTTGAACCT CAATTCAGC AATTTCTAAC ATCTTTTTC	2820
CAGTCTCTAG TTCGGATGTC AAAGTTCTAG ACTTAAGATT TTCCACAATG GTTCGCACTT	2880
CATTATGGA TCCTTGCTGA TCTGGTGAAT TTCTTTTAA TCCTTTTCCA CCTGTGGATA	2940
AGCCTCCATC TGAAATAACT GCAAGGCTAA ATCTGTCTTG ACACTCAGCA TAGCAAAGGT	3000
ATGTCCCAGA CTATCATGCA AATCCTGACC GATACGACTA CGTTCATTTT CAGCAAGCAA	3060
TAGATTTATC TGAGCATTTT GCTTGACCTG AGCTTCTTTC AAATCCTCGA CAATACGAAT	3120
CCGAACCAAT CCAAAAGTCA TTAAATCGAC AAAAGTAAGA ATTACAAGTA GATAGAATAG	3180
AAACTCAACT TCGATTCTCT GAAAAATCAA CAGTTGCCCC ACAACAAGGA CTTGAGCAAG	3240
AAGAAAAGTC CAGACATGTA AAGACTTTAA ACTACGTACG CTGAAATGAT AACTTAAGAG	3300
ATTGGATAGG AAAAAGAAAA ACCAGATATA ATTAACAGCA ACAAAGGCAG TATTCCCAAC	3360
TACATAAGTC AGCATGAGGC CCCAATATAG CCAAGATAGG CGCTGGCTCT TAGTTGTAA	3420
AACACCCAAA TATGCCACTA CAAATAGAAT ATCAATCAAT AAATGCCAGG CAGAAAGCCA	3480
CCCAGTCACT ACAGACAGGA TGGGGAAAAT CATAAAAATT AACTGATCC AAAACATATA	3540
ATGTATCTT TTCAGTCTTT CAAGCATTA GCAATCTCCT TATGACCTTG AAGGTAAATG	3600
GTCAAACCAA ACAAACTAC TGAAAAACA AGTAAATAA CTGTGGCTGA TAGATTGATG	3660
CCACCCTCAT TTAAGAAGGT CTTGAGCAAC TCCATCAACT GATAGGTCGG GAGACACTTA	3720
CCTACTACTT GCATCCAGTC TGGAAATAA GAGATAGGCA TCCAGAGTCC ACCTAAAACA	3780
GCCAACCCTA GATAAGAAG ATTGCCCACG ACAGACATCA ACTGACTAGT TGGTAAGAGA	3840

1172

GTCAAGGTCA AACCAAGCGC TACGAAGGCA ATACTTCCTA CTATCAGCAA AAGTGCAGCC	3900
CCAATCCAAT TTCCAAGAGA CATGTCCACA CCTCTTACAA AATGCCCAAC TGAGAAAACC	3960
ACCAAGATTG AAACCAAATA ATCAACCAGC ATACTTGTTA TCTTTGATAG ATAATATTCT	4020
ACCATATTTA CAGGGCTATG ACGCAATGTT TTCTGCCAGT TGTTGATCTT GTCGGTATGT	4080
AAAACAAC TGGAATGAGAA GATAGCTGTT GACATCATGG AAAATGCAGT CATGGAGATA	4140
AGATAATCAC GCATAAAATT CGCGAGTTCA CCTGGTGTGT CCTGATAGAT ACCAGAAAAA	4200
AATAAATAGA AAGCCGTCGG CATCCCTACT GACAATAGAT AATAGATCAA TTGTCGTTTG	4260
GTCAATAAAA ATTCTATCTT ACTAAGTGCT AGCCATCGTT TCATCTTAGT TATCTCCCTT	4320
CTGCGTTTCT TCAAAGATTG TATCCAACAA ACTACGATTA TTAACCTCAA TTTCTTGAT	4380
GCCACATCCT GCTTGAAC TAACAGTTCCCA AAAAGCATCT GCTTCGCGTG TGAATACTTG	4440
TAGAGCATCC TGTMTTGTG ACCAGTTTTC AACCAAGTTA GACTGCTCAA TGACTTCCTT	4500
GTATGCCAGA GGAAGGATAA AATGCTTTTC AATTCCTCA CTACGCATAG CTAGAGGCGT	4560
CGTATCACGA ATCAACTCTC CCTTATTAA AACCAAAATC CGGTCAGCCG TATGCTCTAC	4620
CTCTTCAATA TAATGAGACG AATAGAGAAT CGTGACTCCT TGCGCTTTTA GGTCCCGAAC	4680
GATTTCCCAA AAGCGTTGAC GAGTTGAAGT ATCCATGGCA GCAGTTGGTT CATCTAAAAA	4740
GACAAGCTTT GGTGCGCCAA TCAAGGTCAA GACAAAAGAG AAGAGACGCT TTTGCCCCGC	4800
TGACAATTTT TCTGCGAATT GCTCTTTTGT TTGCTGGTCA AACTGCAATA GTTGATCGAT	4860
TTCCTGATCG CTCAAGGAAT TTGGATAGAT ACGTTGAAAG AAAGCAATCA ACTCTTTGAC	4920
CTTTAATTTT TGAACGATGA CATTTTCTTG AGGCAGATAA CCTCTAATAT AGTCTAACTG	4980
AGAACTCGTC ACTGACAAGC CTGGATGGA TACTTGACCG CTTGTGACCA GTTTATCTCC	5040
AAGCAGACAG TCCAAGAGTG TGGTCTTCCC AGCACCATTG GGCCCAATCA AGGCGACGCA	5100
TTCACCTTCA GCTACCTCAA AGGAAATACC CTTCAAAATA GCCTTGCCCT TGATGTTTTT	5160
ATTTAGGCTT TCTACCTTAA TCATATTCAT GATATTCTCC TTTCAACCAC TCCATTCTCA	5220
TAAGGAAAAC GACGAAAATC ATAAATCCAA ACCCAAAGC ACCACGAATG AATTGGCGAA	5280
gCAAGGTTTG GTCAAACCAA CCTGTAAACA TTTCCACTAA CCATACCAAG AGTGACAGGC	5340
CGATAAAGAA ATAGATGATC CCTCTCTTCA TTCTCAAGC TCCTTTTCA CATCTCCGAC	5400
TAATTTCAA CCTTCTCTAA CAAGCCAAGA CATCATTTCA AAGCCAGCAA AGAGCTCCCA	5460
AGGAAAATGA TAGAACTCT CATCCAATCC CGAAAACATG AGTTAGGTCA TAACTCCTGC	5520
TACTACTAAA CTCACTGCGA TAATCATTTT ATTTCTCATC TCTTCTTCTT CCATTTTATA	5580
CTACAATTAT AGTCTTTTGA AATCAGAGGA GACAGAAGCT TCTGTCACTA GAAAATATGA	5640

1173

CAAATGTCAT	AAAAAATTCT	GTTCAAAACA	AGCAAGATAC	ACTATACAAT	AAAACACAAT	5700
TAGAAAAATC	TAAGGCAACT	TCCTCAAAAG	AGATATCAAA	CCCAATTCAC	ACCATAATGT	5760
AAACTAATAC	TTATTTAAAA	TCAAAAAGAG	TAGAAATTTT	TATCAGACAA	ACACATATAT	5820
AGTGTATTGA	ATCTATAACA	GTAGGCCTTA	AATACTAAAA	TATTTCTATA	AATTAATTTA	5880
ACTTTCCTGA	TAGAGCTGTT	CATATCTTAT	TTCAATTCTC	TAAATTATAC	GTTGAACAAA	5940
ACCCTTCTAT	TTCTTTCTTA	AAGATTTATA	AGAGTTATAA	AATCTGTTAA	ATTTCATGT	6000
GTATACCTAA	ACTACGGTAT	TTATTGAAAA	GACTGGAGAC	AAAAAGTATA	CGCTGCCAAA	6060
ATGAATTACT	GAAAATCAAA	AAAGAGAGAA	CCAAACTGAT	TCCCTCTTAA	TGTATATAAT	6120
ATCTAGTTT	AAAAATACAC	ACTCACATAT	CTCTGTAATG	AATCGGAAG	ACAGGATTCG	6180
AACCTGCGAC	ACCTTGGTCC	CAAACCAAGC	ACTCTACCAA	GCTGAGCTAC	TTCCCAGATT	6240
AAATAGAAAA	ATGCACCCTA	GAGGAGTCGA	ACCTCTAACC	GCCTGATTCG	TAGTCAGGTA	6300
CTCTATCCAG	TTGAGCTAAG	GGTGCTCCAT	ATTATGCCGA	GGACCGGAAT	CGAACCGGTA	6360
CGATCGTTAC	CAATCGCAGG	ATTTTAAGTC	CTGTGCGTCT	GCCAGTTCCG	CCACCCCGGC	6420
CTCTCTAAGC	GAACGACGGG	ATTCGAACCC	GCGACCCCCA	CCTTGGCAAG	GTGGTGTTCT	6480
ACCACTGAAC	TACGTTTCGA	CTGTTTCTT	CTATCTAAAA	ATGCCGGCTA	CATGACTTGA	6540
ACACGCGACC	CTCTGATTAC	AAATCAGATG	CTCTACCAAC	TGAGCTAAGC	CGGCTCATTT	6600
GTTATATCTT	AATGCGGGTT	AAGGGACTTG	AACCCCCACG	CCGTTAAGCG	CCAGATCCTA	6660
AATCTGGTGC	GTCTGCCAAT	TCCGCCAAAC	CCGCATATAT	GACCCGTAAT	GGGCTCGAAC	6720
CAGTGACCCA	TTGATTAAAA	GTCAATTGCT	CTACCAACTG	AGCTAACGAG	TCTAAAATAA	6780
cTTGCGTTAC	CTTAAACGGT	CCCACGGGA	ATCGAACCCG	CGATCTCGCC	GTGACAAGGC	6840
GACGTG						6846

(2) INFORMATION FOR SEQ ID NO: 199:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2911 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 199:

GAATTCATTT	TAAATAAAGA	TACGGGAGAG	GTAAGTGAAT	TAAACCTCA	TAGGGTAACT	60
GTGACCATTC	AAAATGGAAA	AGAAATGAGT	TCAACGATAG	TGTCGGAAGA	AGATTTTATT	120

1174

TTACCTGTTT ATAAGGGTGA ATTAGAAAAA GGATACCAAT TTGATGGTTG GGAAATTTCT	180
GGTTTCGAAG GTAAAAAAGA CGCTGGCTAT GTTATTAATC TATCAAAAGA TACCTTTATA	240
AAACCTGTAT TCAAGAAAAT AGAGGAGAAA AAGGAGGAAG AAAATAAACC TACTTTTGAT	300
GTATCGAAAA AGAAAGATAA CCCACAAGTA AACCATAGTC AATTAAATGA AAGTCACAGA	360
AAAGAGGATT TACAAAGAGA AGAGCATTCA CAAAAATCTG ATTCAACTAA GGATGTTACA	420
GCTACAGTTC TTGATAAAAA CAATATCAGT AGTAAATCAA CTACTAACAA TCCTAATAAG	480
TTGCCAAAA CTGGAACAGC AAGCGGAGCC CAGACACTAT TAGCTGCCGG AATAATGTTT	540
ATAGTAGGAA TTTTCTTGG ATTGAAGAAA AAAAATCAAG ATTAAGATAA AAGCTATAGA	600
AAAAAATGGT TTATGTACTG AGATTAGATA GTGAGGTGAT GACATAGTTT TGTGAAAATA	660
GCCATTTATA ACTCAATTAT TTAGTTTACT TTACTTTACT AGTGATACTA TTTGGAGTTA	720
TTAATGGACT TAGTTTATAT AACTAATGAA TTGATTGAAA GGGTTAGTAT TGACAATATT	780
GGTCATATTG ACTAGAAAAT AGAGTCTATC AAAATTTAAA GGCTAATAGA GGTGATGAGA	840
CAATTCGGC TCTTTGTCAA CTGTAGTGGG TTGAAGTCAG CTAAGCTCGA GAAAGGACAA	900
ATTTTGCTCT TCTTTTMTG ATATTCAGAG CGATAAAAAT CCGTTTMTG AAGTTTTC	960
AGTTTCGAAA ACCAAAGGCA TTGCGCTTGA TAAGTTTGAT GAGATTATTG GTCGCTTCCA	1020
GTTTGGCATT AGAATAGTGT AGTTGAAGGG CATTGACAAT CTTCTCTTTA TCTTTGAGGA	1080
AGGTTTTAGA GGATGAACTT GATTGAGATT GTCCTCAATG AGTCCGAAAA ATTTGTCAGG	1140
CTCCTTATTC TGAAAGTGAA AAAGCAAGAG TTGATAGAGA TTATAGTGGT GTTTCAGTC	1200
TTCTGAATAG CTCAAAAGTT TATCTATAGT AGATTGAAAC TAGAATAGTA CACCTCTGCT	1260
TCTAAAACAT TGTTAGAAAT CGATTTGACT GTCCTGAATG ATTTGTCCTG TTATTATTTT	1320
ATTTTACTAT AAATCCACGT TTACGAATCT CTTTCCACAC TTGTTCAATG GGGTTCATCT	1380
CTGGTGTGTA TGGAGGAATA AATGCAAAAC CAATATTAGT CGGAATCTTT AAGGTACTTG	1440
ATTTATGCCA TATAGCATTG TCCATAACGA GTAAAAGATA ATCATCTGGA TAAGCTTG	1500
AAAGCTCCTA TTCCTAAAGC CCCTTTATAA CCTCTTGCGA GAGAGACTAT TGA	1560
CTTACTTCAT GCGGATGAAA CTTCTTATCG GGTCTAGAG AGTCATAGCC ATCTGACCTA	1620
CTATTGGACC TTTTGTCTG GGAAAGTTGA GAATCAAGCA ATCAGCTGT ACCATCATGA	1680
TCAGAGTCGG AGTGGTTCGG TAGTACAAGA ATTCCTAGGA GATTATTCTG GCTATGTTCA	1740
TTGTGATATG TTGCGGCAGT AACTTAGGAC TTTAGTCCTC TAGTTCTGCC TATGCGATAG	1800
CAGTCCAAGG TTTAGGAGCA AGGCGACGCT AAGCTTGGTA AACTGCGAAC CGCTAGAAGC	1860
TTATCGTCAA CTGGAAGAAG CTGAACTTGT TGGATGTTGG GCGCATGTGA GAAGGAAATT	1920

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TTTTGAAGCG ACCCCAAGC AAGCAGATAA ATCATCCTTA GGAGCTAAAG GTTTAGCTTA      1980
TTGTGATCAG TTATTTTCCT TGGAAAKAGA CTGGGAGGCT TTGCCAGCTG ATGAACGACT      2040
ACAGAAACGT CAAGAACATC TCCAGCCCCT AATGGAAGAC TTCTTTGCTT GGTGCCGCCG      2100
TCAGTCAGTT TTAGCAGGTT CAAAAC TAGG AAGGGCAATT GAATACAGCC TCAAGTATGA      2160
AGAAACCTTT AAGACTATTT TGAAAGACGG ACATCTGGTC CTTTCCAATA ATCTAGCTGA      2220
ACGCGCCATT AAATCATTGG TTATGGGACG GAGTAAAGA GTCCAGTGGG CTCTTTTAGC      2280
CTGAGCTCAG TTAAAAAAG CGAGGGTGGT TATTTTCTCA AAGTTTGTAA GGAGCTAAAG      2340
CAAGAGCTAT TGTTATGAGC TTGTTGGAAA CAGCTAAACG TCATCAATTA TAGTGCGTTG      2400
AATCTATAAC AGTACGCATC GACTGCTAAA ACATTTCTAT AAATCAATTT TCCTTTCCTA      2460
ATCGATTTGT TCATATCTTA TTTCAATCCA TTATAAATAG CGAGAAATAT CTATCCTATC      2520
TTCTAGAATG TCTTCCAAAC GAGGAAACTC TCGTAAACAA AGAGGTTTTA GAGGTTTATT      2580
TACCATGGAC TAAAGTTGTA CAAGAAAAGT GCAAATAAGA AATCTCCAGA TTAGGAACTA      2640
TCCGTGAGTT CACTAATCTG GAGATTTTTC AATAGATTCG TTATTGGGCG GTTACGATAT      2700
GATcACTACT TCGTCAGTCT TATCTACAAC CTCAAAACAG TGTMTTGAGC AACCTGCGAC      2760
TAGCTTCCTA GTTTACTCTT TGATTTTCAT TGAATATTAG AACAGAAAAA ATGCTTGAG      2820
TATTTGTTTG TGTGTTTATT TTTATATAAC AAATAATAA CAAAATAAAA ATATAAAAAA      2880
AGAGACAAAA AAGAACAGAA AGTAATTGAC A                                     2911

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(2) INFORMATION FOR SEQ ID NO: 200:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 6854 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 200:

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GAAAATAAGT CTTGACAGAA AGCGCTATCA ATGATAGAAT GAATTCAGAT AAAAAGATTT      60
ATTTTAAAA CAAAATGAA ACGTTTCAAA AAAAGAAATA AAGAGACAGC GCCAAGCGCT      120
ATCTTTTCTA GAAAAAATG AAACGTTTCA AAAAAGGAGG TTGCTATGAA TAGCAAAGCG      180
AAGCAAGTTT CTCTTTGGGA AAGAATCAAG AAACAAAAAC TCTTGTATT GATGACTGTC      240
CCCGGTTTAG TTTTAACCTT TATCTTTAAA TACATCCCTA TGTATGGGGT TTTAATCGCA      300
TTTAAAGATT ACAATCCTTT AAAAGGAATT TTAGGGAGTG ATTGGATTGG TTTTCTGAG      360

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1176

TTTACAAAAT TCATATCCTC TCCCAACTTT GGTATCTTGT TAGCCAACAC ATTAAAATTA	420
AGTATCTATG GTTTATTGCT TGGCTTTTTA CCACCAATCA TTCTCGCGAT TATGCTCAAT	480
CAACTCTTGA GTGAAAAAGT CAAAAACGA ATTCAGCTCA TTTTATACGC ACCAACTTT	540
ATCTCAGTCG TTGTTATTGT CGGTATGATT TTCCTCTTCT TTTCAGTGGG AGGACCAATC	600
AACAATTTTC TTTCTATGTT TGGAAATGAAG GCTGACTTCT TGACAAATCC AGACTTCTTT	660
AGACCTTTAT ACATCTTTAG TGGTATCTGG CAAGGAATGG GCTGGGCTTC AACGCTCTAC	720
ACGGCAACAT TGGTAAATGT AGATCCAGCC TTAGTAGAAG CAGCCCGACT GGATGGAGCC	780
AATATCTTCC AACGAATCTG GCACATTGAT ATTCCAGCTC TTAAGCCTAT TATGGTTATC	840
CAATTTGTTT TAGCTGCAGG TGGAAATTATG AATGTCGGAT ATGAAAAAGC ATTCTTGATG	900
CAGACATCGT TAAATTTGCC AACTTCTGAA ATTATCTCGA CATATGTCTA TAAAGTTGGT	960
CTTGATCAG GAGACTATTC TTAACAACA GCGGTTGGTT TGTTTAATGC AGTGATTAAC	1020
GTAGTATTGC TTGTTGCAGT TAACCAAATC GTTAAACGCA TGAATAATGG TGAAGGAATT	1080
TAAGGAGGAA AGTATGAAAA ATTCGATTAT GGATACAAAA TTTGATAGAC GTATCTTACT	1140
CTTAAATAAA ATCATTATTG TCTTTATCGT TTTGATGACT TTGCTTCCTT TACTTTATAT	1200
CGTCGTAGCA TCCTTTATGG ATCCTAAGGT TCTGGTTAGT AGAGGGATTA GCTTTAATCC	1260
AGCCGATTGG ACTGTAGAAG GTTACCAGCG TGTATTCACT GACCAATCTA TTCTAAGAGG	1320
TTTTATCAAT TCTCTACTAT ACTCTTTTGG ATTTGCAGCT TTAACAGTCT TGCTATCTGT	1380
GTTTACAGCT TATCCTCTTT CTAAGAAAGA CTGTTGGA CGTCGTTGGA TTAAGTACTT	1440
CTTGATTGTA ACTATGTTCT TTGGTGGTGG TTTAGTCCCA ACTTACTTGC TCGTAAAAGA	1500
ATTGGGAATG CTCAATACTC CATGGGCTAT CATTGTTCCA GGTGCTGTTA ACGTTTGGAA	1560
TATTATTCTT GCTAGGGCCT ATTCCAAGG ATTGCCCTGAA GAATTAGTTG AAGCTGCTGT	1620
CATTGATGGT GCAAATGATT TACAGATTTT CTTCAAAATC ATGCTTCCTC TTGCAAAACC	1680
AATTATGTTT GTTCTCTTCC TTTATGCTTT TGTAGGACAG TGGAATCAT ACTTTGATGC	1740
AATGATTTAT ATCAAGGATC CAAACTTGA ACCATTGCAA CTTGTACTTC GTAAAATTCT	1800
CATTAGAGC CAACCAGGTC AAGACATGAT TGGAGCACAA GCGGCTATGA ATGAAATGAA	1860
ACGTTTAGCT GAATTGATTA AATACGCAAC TATTGTCATT TCCAGCTTGC CATTGATTGT	1920
TATGTATCCA TTCTTCCAAA AATACTTTGA TAAAGGAATT ATGGCTGGTT CACTTAAAGG	1980
ATAAAAAAG AAAAAATAAA AGGAGTTTTC TCATGAAATT CAAAACATTC TCAAAATCAG	2040
CAGTTTGTG GACAGCTAGT TTAGCAGTAC TTGCAGCCTG TGGCTCAAAA AATACAGCTT	2100
CAAGTCCAGA TTATAAGTTG GAAGGTGTAA CATTCCCGCT TCAAGAAAAG AAAACATTGA	2160

1177

AGTTTATGAC AGCCAGTTCA CCGTTATCTC CTAAAGACCC AAATGAAAAG TTAATTTTGC	2220
AACGTTTGGG GAAGGAAACT GCGGTCATA TTGACTGGAC CAACTACCAA TCCGACTTTG	2280
CAGAAAAACG TAACTTGGAT ATTTCTAGTG GTGATTTACC AGATGCTATC CACAACGACG	2340
GAGCTTCAGA TGTGGACTTG ATGAACTGGG CTAAAAAAGG TGTATTATT CCAGTTGAAG	2400
ATTTGATTGA TAAATACATG CCAATCTTA AGAAAATTTT GGATGAGAAA CCAGAGTACA	2460
AGGCCTTGAT GACAGCACCT GATGGGCACA TTTACTCATT TCCATGGATT GAAGAGCTTG	2520
GAGATGGTAA AGAGTCTATT CACAGTGTC ACGATATGGC TTGGATTAAAC AAAGATTGGC	2580
TTAAGAAACT TGGTCTTGAA ATGCCAAAA CTACTGATGA TTTGATTAAA GTCCTAGAAG	2640
CTTTCAAAA CGGGGATCCA AATGGAAATG GAGAGGCTGA TGAAATTCCA TTTTCATTTA	2700
TTAGTGGTAA CGGAAACGAA GATTTTAAAT TCCTATTTGC TGCATTTGGT ATAGGGGATA	2760
ACGATGATCA TTTAGTAGTA GGAAATGATG GCAAAGTTGA CTTACAGCA GATAACGATA	2820
ACTATAAAGA AGGTGTCAA TTTATCCGTC AATTGCAAGA AAAAGGCCTG ATTGATAAAG	2880
AAGCTTTCTGA ACATGATTGG AATAGTTACA TTGCTAAAG TCATGATCAG AAATTTGGTG	2940
TTTACTTTAC ATGGGATAAG AATAATGTTA CTGGAAGTAA CGAAAGTTAT GATGTTTTAC	3000
CAGTACTTGC TGGACCAAGT GGTCAAAAAC ACGTAGCTCG TACAAACGGT ATGGGATTTG	3060
CACGTGACAA GATGGTTATT ACCAGTGTA AAAAAACCT AGAATTGACA GCTAAATGGA	3120
TTGATGCACA ATACGCTCCA CTCCAATCTG TGCAAAATA CTGGGGAAC TACGGAGATG	3180
ACAAACAACA AAACATCTTT GAATTGGATC AAGCGTCAA TAGTCTAAAA CACTTACCAC	3240
TAAACGGAAC TGCACCAGCA GAACCTCGTC AAAAGACTGA AGTAGGAGGA CCACTAGCTA	3300
TCCTAGATTC ATACTATGGT AAAGTAACAA CCATGCCTGA TGATGCCAAA TGGCGTTTGG	3360
ATCTTATCAA AGAATATTAT GTTCCTTACA TGAGCAATGT CAATAACTAT CCAAGAGTCT	3420
TTATGACACA GGAAGATTG GACAAGATTG CCCATATCGA AGCAGATATG AATGACTATA	3480
TCTACCGTAA ACGTGCTGAA TGGATTGTAA ATGGCAATAT TGATACTGAG TGGGATGATT	3540
ACAAGAAAGA ACTTGAAAA TACGGACTTT CTGATTACCT CGCTATTAAA CAAAAACT	3600
ACGACCAATA CCAAGCAAAC AAAAAGTAGA GGTGATTAT GGGAGATAAG AAATACACAG	3660
TAGAAAAAGC CAATCGTTTT ATAGCAGAAA ATAAACATCT CGTTAATACT CAATATAAGC	3720
CTGAAGAACA TTTTTCAGCT GAGATTGGTT GGATCAATGA TCCAAATGGA TTTGCTATT	3780
TTCTGGGAGA ATACCATCTC TTTTATCAAT TCTATCCATA TGATAGTGT TGGGGCCTA	3840
TGCACTGGGG ACATGCTAAA AGTAAGGACT TGGTGACTTG GGAGCACTTG CCAGTGGCAC	3900

1178

TTGCTCCTGA CCAAGATTAT GACCGAAATG GTTGTTCCTC AGGCTCTGCC ATTGTCAAGG	3960
ATGATCGCCT CTGGCTCATG TACACTGGAC ATATCGAAGA AGAAACCGGT GTCCGCCAAG	4020
TGCAAAATAT GGTATTTTCA GATGACGGGA TTCACTTTGA AAAGATTTC CAAAATCCAG	4080
TTGCAACTGG ATCAGACTTA CCAGATGAGT TGATTGCTGC TGATTTCCGT GATCCAAAAC	4140
TCTTTGAAAA AGATGGACGC TATTACTCCG TAGTAGCTGC CAAACACAAG GATAATGTGG	4200
GCTGTATCGT TCTACTAGGG TCCGATAACC TAGTAGAATG GCAGTTCGAA TCCATCTTTT	4260
TAAAAGGGGG AGAACACCAA GGTTTTATGT GGAATGCCC AGATTACTTC GAGTTAGATG	4320
GGAAAGATTG CCTTATTATG TCACCCATGC GTTATCAGCG TGAGGGAGAC TCATATCATA	4380
ACATCAACTC ATCGCTTTTG TTCACGGGTA AGGTAGATTG GAGAGAAAA CGTTTATCC	4440
CAGATCAGT TCAAGAAAT GATCATGGCC AAGACTTCTA TCGCCTCAA ACATTGTTGG	4500
ACGATCAAAA TCGTCGTATC CTGATTGCTT GGATGCAGAC ATGGGGCGT ACCCTTCCAA	4560
CCCATGACCA AGAACACAAG TGGGCATGTG CCATGACTCT ACCTAGAATT CTAAGATTGG	4620
AAGATGGCAA ACTAAGACAA TTCCCTGTTA AAAAAGGCCA ATATCAAATC CAAATAGATA	4680
AAGATTGTCA TTACCACTTA GGAAATGATA TAGATTATCT TGAATTGGT TATGACAGTA	4740
ATGCCGAGCA AGTTTACATT GATCGTAGCC ATCTTATTC AAAAAATCTA GGTGAAGAAG	4800
AACAGGACAC TAGTCGACGG TATGTAGATA TTGAAGCTAA AGAATTGGAA GTTGTCTAG	4860
ATAAAAATTC CATCGAGATT TTTGTCAATC AAGGTGAAGC AAGCTTGACT GCAACTTATT	4920
ACTTAACGGT GCCAGCTGAG CTATCACGAA TTGATTAAAA ATTAAGTTAT TTCTCCTAAA	4980
GAAAAAGTTC TCTTCTAAA ATAGTGGAAA GAGGACTTTT TGTGTTTGG GTATATAAGC	5040
TTAGTTTATG GTATTTGTAA AATTGGTGTT GGATTATGAT TTAAGCTAGT TTTCTAAAGA	5100
ATTTGAAAAA AATTTTATTT AAGCAAAAAA ACCTTGGTTC CAAGGCTTTT CCTGTTGTAT	5160
TTAGATGCCC CCTACAGGGA TTGTAGGAGA TATGTGCTT AGATGTTCTT GATTTTCTGG	5220
TGTTTGTAA CGTTTAAATG AGTTTTTTGA GTTTGTTGGT GGGGCGTGC CCGCAATTG	5280
CCCGACTTAT TGCTTGAAAA AGAATTTAAA ATATAGTATA GTTAATTATA GATTAACACT	5340
TGCTTGGAGG AACTGATGAA GAACAATGAA AGATTAGGTA TTAATTAAG TAGAGATAGC	5400
GTTTTAGGAT TGAGGGAAGT TAGAAGGCTT TATTTAGGCA GTTCAGATAT CCCAGTTTCT	5460
GATGGCTATG TGATTGAAGT TGCTTATAAC CAGATATCAC ATGAGATTGA TATTATTGAT	5520
TGGGTAGAGT TGAACAAGTC AAAAATTAAG ATAAGTGAAA TTAGTGAAAG CGTGGATATA	5580
GATGCCACTA GCTTGAGAAC AACTTTGACT TTAGACACAT TAGTATATGA AGGTATGAGA	5640
GATATACAGT TAAAGTTGAG AGAGCTTACA AAGGGGAGAG TATTCTTTTC ATTTGTAGTG	5700

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AAGTTAGTTT TGTTCCTTC TATTTTAAAG AAAAAAGATT TACTAGAAAA ATTTCAAGAA 5760
AAGTGTTAAT CAAGTATTGA CACTTTATCT GGATTTCCGT ATAATATGCT TAGAAAGGAA 5820
TCTTCTAAA TTTTTCGT CCTTATGTGT TAATCAAAGA CGAATACAAA AACATATTTT 5880
TTTACTCTAA AAAGTGTTAA TCAATGATGT ATTTGTTAGA GAGGTAGATA AATGGAATTG 5940
AGAGCACCAC CAGTTATAAT AGTATAAAC GTATAATAAA AATATTTTAA CTTGAATTAT 6000
AGAAAAGGAG AAACAAATCA TGAAACAAAA ACAACCGATT GTTCTAGAA CGAAACAACA 6060
TACATTTGAA GAGCTTATTC AAGACCAAAA GTTAGAAAGA TTGGCTAAGT TGTGCCCCGA 6120
TTTGGTTGGA AGGTATGGTT TTAAGCTAG CTGTGCTCT TCATTTGCCA ACTTGATTAA 6180
AGAAGCGTAT GGGGGTAAAA ATCTAACCGT AGTTTATGCG AGTCGGATGT TGGCTCTCTG 6240
GAATATTGCT TGCAGTTGTT ATCATAAGGC TGATGGGTAT TCTTTAGCAG ATGCGCTTTT 6300
TAGTGATAAA AAAATTGTGTC TAGATTCTTA CTATTACCAC AAGAATACCT CTAATACCAT 6360
AACTAGTGAT GTGATAAAG ATGTTTACGA TAATTATAAT AATTATATGG TTTTAACTCG 6420
AGAAGCGACA CCTGAATACA TTTATGTTGT ACAAACTGAA ATGCCAAAAG ATTCAGATTT 6480
ATATTTTAT ATTAGAGAAG TTCTGGGATT ATCGTTTAGT ACCATGCATT ATGCATTTTT 6540
AGTCAAGGTT CTTGCAGGAG CGCTTGCTAG AAAATATAAG CCATATCGAA ATTGAATTAT 6600
TTAAATTTAT ACTCTTCGAA AATCAAATTC AAACCAAGTC AGCTTCGCCT TGCTGTACTC 6660
AAGTGCTGTC TGTGGCTAGC TTCTTAGTTT GCTTTTGTAT TTTCATTGAG TATTACTCTT 6720
ATGGTAGTTA TTTATGCGAT AATAATATTG ATTTGGGAGT TATAGCGAAA ATTTTAGGTT 6780
CTATAATATT TGTAGTGGGT AAACCACTAT AGATATTATG GAGCCTATTT ATTGTAGAAA 6840
AAAGTCCCAT ATGA 6854

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(2) INFORMATION FOR SEQ ID NO: 201:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3895 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 201:

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TCCTTGCTAA GTTTATACTC AATGAAATC AAAGAACAAA CTAGGAAGCT AGCCACAGGT 60
TGCTCAAAGC ACCGCTTTGA GGTTCAGAT AAAACTGACA CGGTTTGAAG AGATTTTCGA 120
AGAGTATTAA TTTACATAAA TAGCCAGTGT TTGATAGGTT TTGAGTAGAA TTTTCTCAGA 180

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1180

CACTTCTGCA TCTTCATAGT TTGATATCAA AATCTGTCCA TTTTGGTAGA CTGCTGGCAA	240
GTCGATTTCa CTTCTTTAGC ATAAAAGTTA TTGAGCACTA GTAACCTTTTG ATCCTCAAAC	300
TGGCGTTCAA AAGCGTAGAC TTGTTTGCTA TCTTCAAAGG CTGGTTTGTA ACTTCCTTCT	360
GAAATGATTG GCATTTCCCTT ACGCATCGAA TCAAGTCTTG ATAGAAGGTA AAAATCGGAC	420
CCTGGATTTC ATTTTCTACA TTGATGTATT TATAGGATTT ACCAGCTTTC AACCAAGGAG	480
TGCCGTGTGA AAATCCTGCA TTTTCCGAAG CATCCCACTG CATGGGAATG CGTGAATTAT	540
CACGCGACTT AGCTTGAATA ATCTGGAAGG CTTCTTGCTG ACTCTTTCCT TCTTCTAAGA	600
GCATCTGATA GGCATTAAGC GATTCGACAT CCACATAATC AGCCATAGAA TCATAGTCTG	660
GGTCAATCAT CCCGATTTC TACCCCATGT AGATATAAGG TGTCCACGT GACAGGTGAA	720
TGCTGGCTGC TAGCATGGTG GTCCTTCCT TCGGAAGTT TTGAATATCG AAAAAACGGT	780
TCAAGGCACG TGGTTGATCG TGATTATCC AAAAGAGGGC ACTCCAACCG TCTTTATCAC	840
TCATTTCCCTT ACCCCAATA TGGTAAAGAC TCTTCAACTC TTCAAAATCA AAGGGAGCCA	900
AGGTCCACTT TTGTCCATCC TTATAGTCCA CCTTGAGGTG ATGAAAATTA AAGGTCATGG	960
ATAATTCCTG ACGATCAGGC GACGAATAGA GGACACAGTT TTCCATGGTG GTAGAAGACA	1020
TTTCCCCAAC TGTCATAAAG CTATCGTCGG ATCCAAAAGT GGCTTG GTTC ATCATACGCA	1080
AATAGTTATG AACGATGGGT TTGTCTGTAT AAGCTGGCTT CCCTTCATTT TCAGGACAGT	1140
CCACTGAAAC CTCGTCCTTA CCGATCAAAT TGATCACATC AAATCGGAAA CCTTTGACAC	1200
CCTTGTCGCG CCAGAAATTA ACAACCTTGA AAAGCTCCTT ACGGACATTG GAATTGCGCC	1260
AGTTAAGGTC AGCCTGGGTC TCATCAAATA GGTGAAGATA GTATTTCCCA GTATCCCCGA	1320
AAGGCGTCCA TGCAGAACCA CCAAACCTAG ACTGCCAATC TGTGGTTGG TCTTGGATGA	1380
AGAAAAAGTC TTGATAATAC TTATCACCAG CTAGGCTTT CTGAAACCAT TCATGCTCTG	1440
TCGAACAATG ATTAAGTACC ATGTCCAGCA TAAAGTCAAT CTTGTGCTCT TTACCGACAC	1500
ACACCATTTT CTCAAAATCA GCCATATCAC CAAAAAGAGG ATCCACTGCC ATATAATCTG	1560
AAATATCGTA ACCATTATCC CGTTGAGGGC TTGGATAGAA TGGATTGAGC CAGACCATAT	1620
CCACACCTAG TTTGGCTAAA TAGGGAATTT TTTCGATAAT CCCACGAAA TCCCCAATAC	1680
CGTTTTCAGT GGTGTCTTTG TAAGATTTTG GATAGATTTG ATAGACTACT TTTCTTTAT	1740
CAAGTGTAT CTGTTCTCC TTTTCTGATA AAAGGGAGGA AGCAGTCTTC CGTCCCTATT	1800
TGTGCTATTT CAATTATACT CAATGAAAAT CAAAGAACAA ACTAGGAAGC TAGCCACAGG	1860
TTGCTCAAAA CACTATTTTG AGGTTGCAGA TAGAGCTGAC GTGGTTTGAA GAGATTTTCG	1920
AAGAGTATTA GATTCGTGTA GCGACCATGA GAGATGCTCC AGCTTGGATC GTTGTCCGAT	1980

1181

AAGTTCGGG AATAGTCGCT GTATAAGCAT CTTGGTTGGT GATGATAACA GGAGTTTCTG	2040
TCACCAGACC TGCAGCCTTA ATGACATCCA TATCAAAACG AATCAGTTGC TGACCAACTG	2100
TAACGTGATC TCCTTGGACT ACAAGACTTT CAAAACCTTT GCCATCAAGA CCTACTGTAT	2160
CCATACCGAT GTGGATGAGC AATTCAACTC CCTCGTCAGA GACAATGCCG ATGGCATGCT	2220
TGGTAGGGAA AAGAACCGTC ACTGTCCCAT TAACTGGAGA GGTCAACTCA CCTTGGCTTG	2280
GTTCAATGAC TAGACCTTGC CCCATGACAC CTGATGCAAA AATAGGATCC GTCGCTTGAC	2340
TCAATTCTTT CACTTGGCCA GTTAGTGGG TGATAATTTT TACCGAAGTA AGTTCTACTG	2400
GTTCATGGTT CACAAATCTT GCTTCTTCTT GAGCAACGAA TTCTGCCTGC AAGTTCGTAT	2460
CGCCCTCTGT TTTTGTAAAG AGACCAGCCT TGC GGAAGAA GAAAGTCAAG AGCATTGGAA	2520
CAACAATCGC AACTAGCATA GTTCTGCAA ATGGCAGCAT GTATTGAGGT TGAATAGAGA	2580
GAATACCTGG CAAACCACCG ATACCAATAG AAGCCGAGT TACATTAAAA GTAACGGATA	2640
ACATGCCTGC AAGGGCTGAA CCAGTCATCC CAGCAACAAA TGGATAAATA TATTTTACGT	2700
TAACCCCAAA AAGAGCTGGT TCTGTAAAC CGAGATAGGC TGAAATGGTT GCAGGAAGTG	2760
AAACCTGAGC CTCACGCTCA TCATGGCGAT GCATGAAATA ATAGGCAAAC ACGGCTGAGC	2820
CTTGAGCAAT ATTAGAAAGA GCAATCATTG GCCATAGGGC AGTGCCACCA GCATCCGCAA	2880
TCAATTGTGT ATCAATGGCA TTGGTCATAT GGTGCAGACC TGTGATGACA AATGGAGCGT	2940
AGAGGGCGCC AAAAATTGCA CCGAAGAGCC ATTTAACTGG ACCAGTTAAA CCTGCCAAGA	3000
CAACTGATGA AAGTCCTTGT CCAATTGTCC AACCGATTGG TCCCAAAACA GTATGAGCCA	3060
AAATCAAGGC TGAATCAAT GACAAGAAAG GTACAAAAAT CATAGAAATG ACTTCTGGGA	3120
TATGCTTGTG CCAGAAGATT TCAAGATAAG ACAGACTCAA ACCTGCAAGC AAGGCTGGGA	3180
TAACTTGGGC TTGGTAACCG ATACGATTAA CAGTAAAATA GCCAAAATTC CAAACCCAGT	3240
TTGCCGCGAT ATCAGCTGCT GGCCTTGAAG CAACCGCATA GGCATTGAGC AACTGAGGCG	3300
ATACCAAACA GATTCCGAGA ACAATTCCCA AAATTGGCT GGTTCCTATC TTACGAGAAA	3360
CAGACCAAGT AATCCCTACT GGTAAGAACT GGAAGATAGC TTCACCAGGC AACCAGAGGA	3420
AGTGATTGAC ACCTGCCCAA AACTGAGAGG ATTCTGTGAT GGTCTTGCCA TCCAACATCG	3480
ACCAATGGAC ACCTTCCAAG ACATTACGGA AACCGAGGAT CAATCCTCCG ACTATCAAGG	3540
CTGGAATAAT CGGAGTAAAA ATCTCCGCCA GAGTGGTCAT AACACCTTGG ACCACGTTTT	3600
GATTACTCTT AGCTGCAGAC TTGGCTGCTT CTTTGGAAC ACCCTCAATA CCTGAAACGG	3660
CTGTAAAATC ATTATAAAAG ATGGGCACGT CATTTCCAAT GATTACCTGA AATTGACCTG	3720

1182

CATTGTGAAA GGTTCCTTTA ACAGCTGGAA TTGACTCGAT AGCTTTAACA TTAGCCTTCT	3780
TATCATCTCC TAAACAAAC CGCATCCGTG TCGCACAGTG AGTTACGGCA GTCACATTTT	3840
CTTGCCTCC GATTGCCTGA AGCAGATCTT TGGCTTCTTG TTCAAATTTT CCCGG	3895

(2) INFORMATION FOR SEQ ID NO: 202:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3936 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 202:

AGGATCGCCG CTCCAGCTAC TAAGTCTCGT GCAGTGCCGA TTTATCAAAC AACATTTTTT	60
GTTTTTGATG ACACGTAGGA AGGTGCCGAT CTGTTTGCTT TGAGGAAACC AGGGAACATT	120
TATACTCGTA TCACCAATCC TACAACAGCT GCCCTGAAG GTGGTGTGA AGCGCTAGcA	180
ACAGCATCAG GTATGACTGC AGTGACTTAT ACGATTTTGG CGATTGCCCA TGCTGGTGAC	240
CATGTAGTGG CTGCTTCGAC TATTTACGGT GGAACCTTCA ATCTTTTGAA AGAACCCTT	300
CCTCGTTATG GTATCACAAC AACCTTTTTC GATATTGATA ATTTGGAGGA AGTAGAAGCA	360
GCTATCAAAG ACAATACCAA GCTTGTCTTG ATTGAAACCT TGGGTAACCC CTTGATTAAAT	420
ATTCCAGACC TGGAAAACT GGCAGAGATT GCTCATAAAC ATCAAATCCC ACTTGTGTCA	480
GACAATACTT TTGCAACACC TTATTTGATT AACGTCTTCT CTCATGGCGT TGACATTGCC	540
ATTCACTCTG TGACTAAGTT TATCGGTGGG CATGGTACAA CTATTGGAGG AATAATTGTC	600
GATAGTGGTC GTTTTGACTG GACGGCTTCA GGGAAATCC CTCAATTTGT TGACGAGGGT	660
CCAAGCTGCC ACAATTTGAG CTATACTCGT GATGTGGGTG CAGCAGCCTT TATTATAGCT	720
GTTTCGAGTC AATTGCTTCG TGATACAGGT GCAGCCTTGT CACCATTCAA TGCTTTCCTC	780
TTGCTACAAA GACTTGAAAC CTCTTCACTT CGTGTGGAAC GCCATGTACA AAATGCTGAG	840
ACAATTGTTG ATTTTCTTGT CAACCATCCT AAGGTAGAAA AGGTAAATTA TCCAAAACCT	900
GCAGATAGTC CTTATCATGC CTTGGCTGAG AAATACTTGC CAAAAGGTGT CGGTTCAATC	960
TTTACCTTCC ACGTCAAAGG TGGCGAGGAA GAAGCACGCA AGGTCATTGA TAATTTAGAA	1020
ATCTTTTCTG ACCTTGCAAA CGCGGCAGAT GCTAAATCGC TTGTTGTCCA TCCAGCAACA	1080
ACCACTCAGC GTCAATTGTC AGAAAAAGAC CTAGAAGCAG CAGGTGTCAC ACCAACTAA	1140
ATTCGTTTGT CAATCGGTCT TGAAAATGTA GAAGATTTGA TTGAAGACTT GCGCTTGGCC	1200
TTGGAAAAAA TTAAAGTAA AAGAAGATAA ACAGTGGGCT TCGACTCACT GTTTTTGATT	1260

1183

TTCCCTCAGG CATGATATAA TGGTTACAGA AGTCTAGAAA GAGGAACGAT ATGAACGAAA	1320
TCAAAATGTCC CAACTGTGGG GAAGTCTTTA CAGTAAATGA GAGTCAGTAT GCCGAACCTCT	1380
TGTCCCAAGT GAGAACGGCA GAGTTTGATA AGGAACTACA CGATAGGATG AAGCAGGAAC	1440
TGGCCTTGGC TGAGCAAAAG GCCATGAATG AGCAACAGAC TAACTGGCT CAGAAGGATC	1500
AAGAAATTGC GCAATTACAG AGTCAGATCC AAACTTTGA TACAGAAAAA GAATTGGCCA	1560
AGAAAGAGGT TGAACAGACA AGCCATGAGG CTCTCTTGGC TAAGGACAAG GAAGTACAGC	1620
TCTTAGAAAA TCAGTTGGCT ACCTTGCGTT TGGAGCATGA AAATCAACTA CAAAAGACCC	1680
TTTCTGACCT AGAAAAAGAA CGGGATCAGG TTA AAAACCA ACTACTTTTG CAGGAAAAGG	1740
AAAATGAATT ATCTTTGGCT TCTGTTAAGC AAACTACGA AGCCCAGCTC AAGGCAGCTA	1800
GTGAACAAGT CGAGTTTAT AAGAATTTTA AGGCTCAACA ATCTACAAA GCGATTGGGG	1860
AAAGCCTAGA ACAGTATGCA GAGAGTGAGT TTAACAAGGT TCGTAGTTTC GCCTTTCCAA	1920
ATGCTTACTT TGAGAAGGAT AACAAGGTCT CTTCCGTGG GTCTAAAGGG GACTTTATCT	1980
TCCGTGAGTG TGATGAAAAT GGAGTTGAAA TCATTCTAT CATGTTTGAG ATGAAAAACG	2040
AAGCGGACGG AACAGAGAAG AAGCACAAGA ATGCAGATTT TTACAAGGAA TTGGACAAGG	2100
ACCGTCGGA GAAGAACTGT GAGTATGCCG TTTTGGTGAC CATGCTTGAG GCTGATAATG	2160
ACTACTTTAA CACAGGGATT GTTGACGTCA GTCACGAGTA TGAAAAAATG TATGTTGTTC	2220
GTCTCAATT CTTTATCCAA TTGATGGTC TCTTACGTAA TCGCGCGCTA AATTCCCTAA	2280
AATACAAGCA GGAGTTGGCC TTGGTTCGCG AGCAAAATAT TGACATTACG CATTTTGAGG	2340
AAGATTTGGA TGCCTTTAAG CTAGCTTTTG CTAAGAACTA TAATTCAGCT TCGACTAACT	2400
TTGGAAAAGC TATTGATGAA ATCGACAAGG CCATCAAACG CATGGAAGAG GTTAAGAAAT	2460
TCCTGACCAC ATCTGAAAAC CAACTCCGTT TAGCTAACAA CAAATTGGAA GATGTCTCTG	2520
TTAAAAAATT GACCCGAAA AATCCAACAA TGAAAGCGAA GTTCGAAGCA CTGAAGGGGG	2580
AGTAGAAAGC AAAAATGAAC GGTATTATTA ACTTAAAAA GGAAGCAGGA ATGACCTCGC	2640
ATGATGCCGT TTTTAACTG CGTAAGATTT TGGGAACCA GAAAATTGGT CATGGTGGA	2700
CCTTGGATCC GGATGTGGTG GGTGTTTTCG CGATTGCGGT TGGCAAGGCG ACACGCATGG	2760
TCGAGTTTAT GCAGGACGAG GGTAAGATCT ATGAGGGGA AATCACTCTG GGCTATTCCA	2820
CGAAGACTGA GGATGCTAGT GGGGAAGTGG TCGCAGAAAC CCCTGTTTTC TCTCTCTTGG	2880
ATGAAAAGCT TGTGATGAA GCGATTGCTA GCTTGACTGG GCCTATTACT CAGATTCCCC	2940
CTATGTATTC GGCAGTTAAG GTTAATGGTC GCAAGCTCTA TGAGTATGCG CGTGCTGGTC	3000

1184

AGGAAGTGA GCGTCCAGAA CGTCAGGTGA CCATTATCA ATTTGAGCGA ACAAGTCCGA	3060
TTTCTTATGA TGGCCAACTT GCCCGATTCA CTTTTCGTGT AAAATGCAGT AAAGGGACGT	3120
ACATCCGTAC TTTGTCACTT GATTTGGGTG AAAAGCTTGG TTATGCGGCT CATATGTCCC	3180
ATTTGACTCG TACTAGTGCT GCTGGCTTAC AATTAGAAGA CGCTCTTGCC TTGGAGGAAA	3240
TTGCTGAAAA AGTAGAGGCT GGGCAATTAG ATTTTCTCCA TCCTTTAGAG ATTGGGACAG	3300
GTGACCTTGT CAAAGTTTTC CTAAGTCCAG AAGAGGCTAC AGAAGTTCGC TTTGGTCGTT	3360
TTATTGAGCT AGACCAAACG GACAAAGAAC TGGCTGCCTT TGAAGATGAT AAATTGTTAG	3420
CCATTCTAGA AAAACGGGGC AATCTCTATA AGCCAAGGAA GGTTTTTAGC TAGATCGTTT	3480
AGGAATAAAA ATCGGGTGAT AGATAACAAT TGCTTGATAA AACCCCATAC TAATAGTAGA	3540
ATGGTTTTGG GAATTATAAT ATTCCAATTG TTGCGAGTTG TAGGTACTCA AATAATCTAT	3600
ATAGAAATTT AGAGGTGTGA AATGAAGCAA TTTAAATTC TTTCAGATAA ATATTTAGAG	3660
TCCATTACAG GTTCTGATGG GAACTTAGGC CCAGGATTG GTGTGATAAT TCCATGATGC	3720
GAAATGAGTT TCGAGAAAGG GTGGAGCAAC TTCTTCAACA AAAAGAAATA AATGAAAATA	3780
GTGAGTTGAG TCACCTGTTT CGTCTTGCTA TACAAAATTT AGACAGAAAT GAAAAATACC	3840
AATCGGTCAT GGCCAATTTG AGTCAAGGGT TGTCACTTTA CCTCATGACG CATCATTACC	3900
AGGCACCTAA GTCTGTCATT GATTTTGGTT TATGGA	3936

(2) INFORMATION FOR SEQ ID NO: 203:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3230 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 203:

CATCCAGCAA CTGCTCCTCT GAGCGTTTCA AAATTGATGT AATTTTCTA GTTTTTCTA	60
ATAAATGTGC CATTTTTCAC CTCGAATTTA ATCGCTATCA TTATAACATA AAAACGTCTC	120
TTTTTCAATA ATTATCTGAA AATTCCTTAT TGACTTGCAT TGACTTACAA TTTAATTAAA	180
AACCAGAATA TTTTAAATTA AATTGTTTCT TTTCTATTGA CAAGTTGCCT ATTTTGTGT	240
ATCATAATAT TATAAAAGAT AATATAATAA TTTTATTGT CTTTTCACAT TCGGTCTCCT	300
TATATAAAAA AGCGATTCAT TTTGAACCGC TTTTCTTAT TTATCGCCTT TGTTACGAAT	360
AACAAAGCCT GTTTGCTTTT CGCTTAAAGT ATTGCGTGGT TTTTATTAT CCTTACGGTA	420
ACGTTTTTCC TTATCAAAAC GATCGTTGCC ACGACTTCCT TTTTGAACCT CATCACGGCG	480

1185

ACCATTGCCA CGGCGATCAC GCTCTCGACG GTCGTCCCA CGACGGCCTC CACGACCTCC	540
CTTAGCTTTA CCACCGAAAC CATTACCTGA TGGTTTAAAC GGTAGTGGCT TTTACGTGC	600
AATCTCCACT TCTGGAAGGC TATCTGGGTC TTGGACTGTC AGACTCAAGA TATACATTGC	660
CAATTCTTCT GGAGTAACT CAGCAGCCAA TTTGCGAGCA TCCTTACCAA ATTTCTCAA	720
GTTGGCACGA ATGGTTTCAT CTGCAAAATC ACGTTCGATT TTCTTGAGAG CTACCTGTTT	780
TTTTGATTGG AAGGATTCTT CTACACTTGC AGGTTTGAGA CCTTTCATGC GTTCTTAGT	840
CAAGTTTTC AATGATTGAA GGTAACCCAT TTCGTTTGGA GCAACAAAAG TAATAGATTG	900
ACCTGACTTA CCAGCACGAC CTGTACGACC GATACGGTGA ACATAACTCT CAGGATCTTG	960
TGGAATATCG TAGTTGTAGA CATGGGTCAC ACCTGAAATA TCCAAACCAC GCGCTGCAAC	1020
GTCTGTCGCA ACCAAAACAT CAAGATTGCC ATTTTAAAG TCACGAAGGA CACGAAGACG	1080
TTTGTTTGG TCTAGGTCGC CATGAATTCC TTCTGCACGG AAGCCACGAA TTTTCAAACC	1140
ACGAGTCAAT TCATCCACAC GCGCTTGGT ACGACCAAAT ACAATAGCGA GTTCTGGTTG	1200
TGCCACATCC ATGAGACGAG TCATGGTGTC AAATTTTCT TGTTCCTTAA CACGGATATA	1260
GTACTGGTCA ACCAATTCTG TTGTCAATTC CTTAGCCGCA ATCTTGACAT GTTCAGGGGC	1320
TTTCATAAAC TGAACACCGA TACGTTTGAT GGCATCTGGC ATAGTTGCTG AGAAAAGCAA	1380
AGTTTGACGG TTCTCAGGTA CACGGGAAAT AATGGCTCG ATGTCTTCAA GGAAGCCCAT	1440
GTTAAGCATT TCATCCGCTT CGTCAAGGAT AAGGGTTCA ATGTCTTGTA ATTTCAAGGC	1500
CTTGCGTTTA ATCAAGTCCA AGAGGCGACC TGGAGTTCCT ACCACAATAT GGGCACCAGA	1560
TTTAAGAGCC TTAATTTGTT TTTCAATGCT TGATCCGCCA TATACTGAAC GGACTTTGAC	1620
TCCCTTACTA CGACCAAAGC GGAAGAGTTC TTCTTGACTT TGGACAGCTA GTTCACGAGT	1680
TGGAGCGATG ACCAAGGCTT GGATAGTCGC TTCTTCTGTA CGGATTTTTC CAAGGGTAGG	1740
CAAGCCAAAG GCTGCAGTTT TTCCTGTACC AGTCTGAGCT TGACCGATAA CATCCTTGCC	1800
TTCAAGGGCC AAAGGAATAG TTTGTTCTTG GATAGGACTA GCTTCTACAA AACCAGCTTT	1860
TTCAATTTCT GCTAGCAAAT CAGCAGACAA GTTTAATTCA TTAAATTTCA CGTTATTCTT	1920
CTTTCTAAAG GTGGTGCAGG GCCACCCTAT AGGGCTTAGT TTATACTTTT CTTTTTATGA	1980
CGTATTTTCA TATACTAGA TATAAAATCG TGTGCTTCT TTTCCACAAA AGAAAAGTAC	2040
TGTTTTCTTT GCAACCTATC TAGTATAACA CAAGACCAGA GCAAAAGATA GCCCATTTTC	2100
TACAGAAAAT CATGTAAGCG CTTTTTGACT TTCTTTTGTG ATTGAACGAC CTAGATAATA	2160
AGACAAAGCC AAGGCGATAC TGTATAAAAT GAGAAAAACG AACAAGGTTT GTGTGTACGA	2220

1186

ATGAGCCATT TTATAAGTCT CTGCTAATAA AATAGGTCCC GCTAAACCAG CCATTGCCCCA	2280
AGCTGTTAAA ATATAACCAT GCAGAGCGGC CAATTCCTTG GTTCCAAAAA TATCACTGAG	2340
ATAAGCTGGA ATCAAAGAAA AACCAGCTCC ATAGCAAGTC ATCAAATAG ACATAGCAAC	2400
TACAAATAAA ACGGAATCTG TAAAGAGCCA AAGTGAGAGA GAAAAGAAAA GATTGACAAG	2460
CAGTAATATA CTAAGGTTA GAGGGCGACC GATATAGTCA GACAAACTCG CCCAGAGCAA	2520
GCGACCAAAT CCATTGAAAA TCCCCAAAAC ACCCACCATT ACTGCTGCAT GACTTGTAGA	2580
CAAGCCAGCC ATCTCCTGTG CCATTGGCGA TGCCGCTGAA ATTAAGCCTA AACCACAAGC	2640
TATGTTGATA AAGAAAATAA TCCAAAGCAT ATAAAACCGA TTGCTTTTGA GAGCCTGATT	2700
TGCAGCCATT CCTTGCCTCA AAGAGGCTGT TTTTCTTTC CCTGAAGAAG ATAAAATTGC	2760
AAGCTCTTGC TCATTGAGAC GCTTAATGAA TTGTGAAGCT AGGAGCATGA TAATAAAGTA	2820
ACTTGCTCCT AAAATATAAA AAGTTTCTAC AAGCCCTACC CCTGCGATGA GGTGTGCGC	2880
TATGGGACTA GTCAATAAAG AAGCAAAACC AAACCCATA ATCGCTAAAC CTGTTGCGAG	2940
ACCACGTTTA TCAGGAAACC ATTTTATAAT CGTCGACACA GGGGTAATAT AGCCTGCTCC	3000
CAAACCAAGC CCACCTAAAA TGCCATAAGC GAGATACAAC AACCACAGCT CTGACGGTCT	3060
ATTGCAAATC CTGTTAAGAT ATTTCCACCT GCGTATAGAA AAGCAGATAG ACTTCCCATG	3120
ACTTTCGGAC CAAATTTTTC TACCAAACGC CCCATAAATG CAGCCGATAA GCCCAAACAA	3180
AAGATTGCTA GACTAAAGGC GAAGGCAACA GAAGCCTGAT CCCATCCCGT	3230

(2) INFORMATION FOR SEQ ID NO: 204:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 5096 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 204:

CCTATGAAGA CTGTCCCAAC TGGGTGTCCT TCTAGGCTAT CTGGTCCTGC CACTCCAGTC	60
AAACTAATTC CAAAATCAGA CTGGGTCTTG CTTGCTGCCT GCTCAGCCAT CTTCTGAGCT	120
GTAAATTCAG ACACCACACC ATGTTCTTCC AAATTCTTGG CAGGAATATC CAACATCCTT	180
GATTTTTCCT CCAAGCTATA GGTCACAAAA CCACCTTAA ATATACTTGA AACTCCAGAA	240
AAATTGCGCA CGGTAGCTTG GAAAAGACCT GCCGTCAAAC TCTCTGCAGC CGCGATGGTT	300
TTCCCTTGCC TTTTCAGTTC TTCTACCACA ATGCTGGCTA AACTAGTTTC TTCCCATATA	360
CCATAGCAAA AGTCTCGTAA AGAAATTCCT TCGAAAGTCT GGCAGTCCAA GATTGATTT	420

1187

TCCAAGATAT CCAGCGCTTG ATTCGCCTCT TCTTGACTGC TAGCCTTTGT TGACAGACGT	480
AGAGTGACTT CTCCTGTCTT GGCATAAGGG GCCAAGGTAG GATCGATCTG ATTATCAATT	540
AAATCAGCCA AAATCGTAAC CAACTGGCTC TCGCCAATCC CAAAGAAACG AAGAACTCGG	600
GAATACAGCT TGCTCCCTGT CATCAACTTG GGTAGAAGTT GGTTTAAGAC CATGGGTTTC	660
AATTCACTTG GCGGACCTGG AAGGACGACA TAGGTCACTC CGTCTACTTC TAATTTTCCT	720
CCAACAGCCA GTCCTGTTTC GTTTGGCAGT GGAATCGCTC CTTCTACAAT TTGAGCTTGT	780
CTTTCGTTAT TCGGTGTTTC GGCATAGTCT GGTGCGAGGG TAAAAAAGAT ATCCAACTTC	840
TCCTGAGCCT GAGGATCAAA GACTAATGCT TTCCCTAAAA ATTTAGCTAG GGTTTGTTTG	900
GTTAGGTCGT CCTCAGTTGG CCCCAAACCG CCTGTCAAAA TCACCAGACT GCTACGTTGA	960
CTGGCAATCT CAAGCAAAGA CAAGAGACGA ACTTCATTGT CTCCTACAGC CGTCTGAAAA	1020
TATACATCTA CCCCAATCTC AGCTAGTTTT TCCGACAAAA ACTGGGCATT GGTGTTGACA	1080
ATCTGCCCTG TCAAAATCTC TGTTCACA GCAATGATTT CTGCTTTCAT GTTTCCTCCT	1140
ACCTATCTAT TCGTATTTTT TTGAAAAAAT CGCAGGAATT TTCCTACGAT TGATTTTTTT	1200
ATTTGTATCA AAAGTTAATT ATCTTCATCA CCAACAGGTG CTCTGCCAAA TAAATCTTCA	1260
AATAAAACCG CATTTGGTTTC AAGCTGAGTA ACTTCTTCTT GTCCCAAAGA ACGTCGGAGT	1320
AGATTTTGCA TTTCCAACAT ATGTGCTCTC GAAACAATCT GGTAAGAAAC ACCTTGAAGT	1380
ATCTCTCCTT CACCCTGCAA CTGCTGAGTT TCAATGGTTT TAAATGAATC TTTATAGCCT	1440
AGCAAGTTAG GGATACTTTT TGCAGACAAA TCAATATTGG TCTGCATATT GTCACCTCAA	1500
GCTTTTAGAA TCTCTTGATA ATGACCAATG CTATTTAAAC TGAGAGCTTT TTCCATGACT	1560
TTTTGAATAA CTTACAGTTG ACGTTTTTGA CGACCATAAT CCCCCTCAGG ATCTTGGTAA	1620
CGCATTCGTG CATAGACTAG GGCTTCTTCT CCCCCAATAT GTTGCTCCCC AACACCGATA	1680
GAAATAGTAT TAAATCTTTC TTGGTCACTG ATAGAAATTG GGAAACCTAG GATATTATTG	1740
ACTGTAATAC CTCCTACTGC ATCCACTAGT TTTTGCAATC CTCTCATATT GACCATCACA	1800
TAGCGATCAA TATGGATATT CATCATTTTT TGAATGGTTT CTATAGCAAG CTCTGCTCCA	1860
CCATCTGCAT ATGCTGAGTT CAGTTTCGCT TCATGAGCCT GACCATTTCC TGATTCAATG	1920
CGCGTCAGAA TATCCCGCTC TAAACTCATC ATTGTTGTTT TTTTCGTTTT AGGATTCACT	1980
GTCATCAAGA TCATGCTATC ACTTCTACCG ACCCAAGTTT CAGTTCGTTC AACATTTCCG	2040
GTGTCCACTC CCATTAACAG AATGGTTAGA GGTTCACTCG CTTCAATAAC CTTGGTTTCT	2100
TCACCGATTT TTTTATAGGT TTTAGCTAAG GTTCTGTGCC CTTGTTGATA AATAGTATAA	2160

1188

GCAAAAACAC	CTACTCCTAC	TACAGTTACA	GAAAGTAAAG	CTAGCACCAT	TCCAATAATT	2220
TTTTTAACCA	TATTTCTACT	AACCTATCAG	TTTACCCATC	AAGTAAACAT	CGATAAAATT	2280
CCCTTCTTCT	ATATATGCCC	CACGCTCTTG	GCTACCTTCA	ATGACAAAGC	CATGCTTTTG	2340
ATAAAGATGG	ACTGCTGCTT	GATTACGAGT	TTGGACAGTC	AGTTGGAGAC	GACGCAGAAT	2400
GCCACTTGCT	TGTGCCCACT	CTATCGCTTC	TTCTAGCAAC	AAACTTCCCA	AGCCATTATT	2460
CCAATATCTT	TTTCCAATCA	CAATGAAGAG	ATCTCCAATA	TGACGGACTC	TCTTACGCTG	2520
ATCAGCTGTA	ATATTTACAA	TACCAGCAAT	TTTGCCATTT	AAGAATGCAA	GTAAGGTTAT	2580
CTGATTGTCC	GAAC TAGCTT	GCTTGTTGAG	GAATATTTCC	ATCTCCTCAC	TAGTCAAGAG	2640
AATACCATCT	CCGTCTAGGC	TGGTAAAGTC	TGTCTCCAAA	CTCACACGAT	TTAAAAAGGC	2700
CACTAATTCA	GCTGCATCTT	TGGGCTCTGC	TTCCCTAATG	AGCAATT CAT	ACTCCATATT	2760
GAAGCTCCTC	TAACAATTTT	TCAGCACGCA	AACCCTTTGC	CTGAAAATTT	AAACGGCGTC	2820
CATCTGCTTC	TTTTAGAATT	TCCAATTCTA	AATAAGCATC	TGGCAAGGCA	TCTCCTAAGA	2880
GATTTCCCCA	CTCAATAACA	GTCACGCCGC	CACCAAAGAT	AAACTCATCC	AAGTCGATAG	2940
AATCAGCATC	TCCTTCAATA	CGATAAACAT	CTAGGTGATA	AAGTGGAAGT	CGACCTTCAT	3000
ACTCTCTCAC	GATAGTATAG	GTGGGACTTT	TAATCATTTG	AGAAATCTGT	AATCCTTTTG	3060
CAAGTCCTTT	AGTAAAGGTC	GTTTTACCTG	CACCCAGTTC	TCCAGTTAAG	ATTAAAAACAT	3120
CATTCTTTGC	TAATAGATGG	CCCAAACGCT	CCCCTAAGGC	TTGCAACTCT	TCTTCATTTT	3180
TTGTGTACAT	ACTCTTATTA	TACCAAAAAC	TTTTCTTTTG	TGTCTATTTT	CCTACTAAAC	3240
TTATCATCAT	AACATCCATA	AAAAACAGGC	TTTCTCTAAA	AGAAAATGAG	CGTAACAATG	3300
ACCAATACAA	GATCTCGGAA	AATATGACCA	TAAAAGGAAA	CTTCCTTCTT	AACCGAATTT	3360
GGGACAAGAT	AGGCTGCAAA	AAACAAGCCC	AGTCCAATAT	AAATCAGAAG	TGAGACAATG	3420
GTCATTGGAT	TTCTTAAGAA	AAGAAGTGTT	GCTAAAATAG	TCACCAACAC	TGTCTTTTTT	3480
CTGTCCAGCA	TAGCAAGAAA	ATCGCGCACG	TATTTTTTCA	AGGGTAAAAA	AATCAGCAAA	3540
TCTAGCCCAA	ATAGGAAAAA	GAAGGATGGC	AATAAAAAGT	CAACTAATTC	TTGCTGCAGC	3600
GTATTTTGA	TGAACAAGTT	ATCTGACAAA	ACAAGAACAG	CTCCTAACAA	ATTAATTAAG	3660
AGTAACATAC	TGTAAAAAAG	CTTCACCGAC	TTCTTACTGG	CTAGGACACT	ATGGACTTCT	3720
TGCTTACGGG	TATAAAGATA	ATTTACTCCA	GCACAGATTC	CTGAAACGAA	AACCATGCTT	3780
CCGATGAAAA	AAGCTGTACT	TTGTTTAAAG	GACAAGATGC	ATTCCTTCCA	TAGGAAACAG	3840
CTACTCAAAC	TGATTTGAAT	TAAAGCTAAC	AAAAATAAGA	TTCTCATTGA	TTTCATCTTC	3900
TCTCTCCCTT	CCTACCAATC	ATTATACTAG	GAGAAAAGAG	AGAACTGTTT	CTAATCTTCT	3960

1189

CAAATGTCTC TTTAAGACGC TAAACAAACA CTAGAGACTA ATACTCAATG AAAATCAAAG	4020
ATCAAAC TAG GTAGCTAGCC ACAGGTTGCT CAAAACAGTG TTTTGAGATT GCAGATAGAG	4080
CTGACGTGAT TTGAAGAGAT TTTTGAAGAA TATAAATTTG AAATCATGAA AATCCGTCAA	4140
ACGGGTGGT GTTTTGTCTC GCACCTCAGC GACGAGACG GACTCAGAGT CACATAATTA	4200
TAAGGCTGAT AGTATTAATC TAACTATCAG CcTmCAGGTT ATTTAACGTT TCAGAAAAAC	4260
TATAATGTCA AGATTAACTA AACAGTATCT AGTTCCTTCA AATAATTTTC TATCTTCATC	4320
AACATTAAAG GATTGTTATA AATCTTACAT AACTCTCTTG CTTCTATATA ATAATTTTGT	4380
ACTTGTCTC TGTCTAGAAA TTTGGCTCCA GCATTTCTTA CAAGAATAAG TAGAGGAGCC	4440
AATTGGTAGC TTGTCTGTCT TTGTTTACAG AGTTCAATCG TTTCAAGAGC TTCTTGATG	4500
GCTTCATTAT ATTTTCTCTT TGATACTAGG TAGTGAGCGT AGTTGTAACG AACTCTGATG	4560
TAGCCAAATA AAAACTCTTG ATGGTCCAAA TTTTTGTCT GATACAACTC TATTAAATGA	4620
GAGTAGTTTG CCTCATATTC TTGTTACGA CCCACTAAGG AATAGAAATT AGATAGAGTA	4680
TTCAACGCCT TTAAATAAAT CAGAGTATTT GAAGAGACTT TTAATAATAT ATTTTCCAAT	4740
GACGAAATTG CCTCACACTT ACTGTCATAT TGATAGAAGT CAATTATAGA TTTAATCCAT	4800
TCAAGGTAAG TTCGGTCTTC TAATGTTAGA AAAGTGCTTC GTTCTACTTC TATTTTATAA	4860
AGATATTCTA AATCGTCATA ATTTCTGTCA TCTAATAGGC GAGCAGATAG ATGTTTGAAA	4920
TTAGAGAGGT TAGACTTAAC TTCGATTGTG TCATTGAAAA AGTAATCCAA AGGGACTTCA	4980
AGTCGTTGAG AGAGTTTGAA TAACAAGTCT GCGGAGGGAA TAAATGACC TCTTTCAATT	5040
TTACTAATCT GGCTTTGTTC ACAAATTCCT TCTGCAAGAG TTTGTTGGGA GAGTCT	5096

(2) INFORMATION FOR SEQ ID NO: 205:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2395 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 205:

ACAAGATAAA AATAAAGGAT TACAATGGGG AATATAAAGT AAACCGGTAA ACCTAAAAAG	60
AAAGGAGAAA AGATGAAAAT TGTACTTGTA GGCATGGAC ATTTTGCTAC AGGGATTTAT	120
AGTTCTTTAC AATTGATTGC AGGTAATCAA GAAAATGTGG AGGCGATTGA CTTTGTGGAA	180
GGAATGTCAG CAGATGAACT CAAGCAAAAA ATCTTACTTG CAATTTCAAA TGAAGAAGAA	240

1190						
GTTTTAATCC	TAAGTGATCT	CTTGGGAGGA	TCGCCATTCA	AGGTTTCTTC	TACCATAATG	300
GGAGAAAATC	CAGCCAAGAC	AATGAATGTT	CTCTCGGGTT	TGAACTTAGC	CATGTTAATG	360
GAAGCAGTCT	TTGCTAGAAT	GGCTCATAGC	TTTGATGAGG	TTGTTAATAA	ATCAGTAGTG	420
GCGGCCCAGG	GCGGAGTCGT	AAATGGTAAA	GAATTGTTTT	CAACGGATGC	AGAGGAAGAG	480
GAAGAAGATT	TCGAATCGGG	TATTTAAAGG	GTAAGAAGAT	GATAAAAAAG	GTTACGATTG	540
AAAAAATAAA	ATCGCCTGAG	CGCTTCTTAG	AAGTACCACT	TCTGACGAAA	GAAGAAGTCG	600
GCCAGGCAAT	CGATAAGGTT	ATTCGGCAGT	TAGAACTCAA	CCTTGACTAT	TTCAAGGAAG	660
ATTTCCCAGC	GCCAGCTACC	TTTGATAATG	TCTATCCAAT	CATGGATAAC	ACGGAATGGA	720
CCAATGGTTT	CTGGACAGGA	GAAGTGTGGT	TGGCTTATGA	ATACAGTCAA	CAGGATGCAT	780
TTAAAAACAT	CGCTCATAAA	AATGTTCTTT	CTTTCCTGGA	TCGTGTCAAT	AAGAGAGTAG	840
AATTGGATCA	CCATGATCTC	GGCTTCTTGT	ACACACCGTC	TTGTATGGCT	GAATATAAGA	900
TAAATGGAGA	TGGAGAGGCT	AGAGAAGCAA	CCTTGAAAGC	TGCAGATAAG	TTGATTGAAC	960
GCTATCAAGA	AAAAGGTGGT	TTTATTCAAG	CTTGGGGAGA	CTTGGGCAAG	AAAGAGCATT	1020
ACCGTTTGAT	TATCGACTGC	TTGCTCAATA	TCCAACCTCT	ATTCTTTGCT	TATCAAGAAA	1080
CAGGCGATCA	AAAATACTAC	GATATTGCAG	AAAGCCATTT	CTATGCTTCA	GCTAATAATG	1140
TAATCCGTGA	TGACGCTTCG	TCCTTCCACA	CCTTCTATTT	TGATCCTGAG	ACAGGTCAAC	1200
CCTTTAAAGG	TGTAACGAGA	CAAGGGTATA	GTGATGATTC	ATGCTGGGCA	CGTGGTCAAT	1260
cATGGGGAGT	CTATGGTATT	CCTTTGACTT	ATCGTCACTT	AAAAGACGAG	tCCTGCTTTG	1320
ACTTGTTTAA	GGGTGTGACC	AATTATTTCT	TGAATCGTCT	GCCAAAAGAT	CATGTGTCCT	1380
ATTGGGATTT	GATTTTAAAT	GATGGTAGTG	ATCAATCACG	AGATTCTTCA	GCAACAGCTA	1440
TCGCCGTCTG	TGGGATTCAT	GAAATGCTAA	AACATCTCCC	AGAGGTGGAT	GCTGACAAAG	1500
ATATTTATAA	ACATGCTATG	CATGCCATGC	TTCGTTCCCT	GATCGAACAT	TATGCAAATG	1560
ATCAATTTAC	CCCTGGTGGG	ACAAGTCTCC	TCCACGGTGT	GTACTCATGG	CATTCAGGTA	1620
AAGGAGTGGA	TGAAGGCAAT	ATCTGGGGTG	ACTACTATTA	CCTAGAAGCC	CTTATCCGTT	1680
TCTACAAAGA	CTGGAACCTA	TATTGGTAGG	AGGAGAAATA	TGACAATGCC	AAATATTATT	1740
ATGACCCGTA	TCGATGAACG	GTTGATTCAT	GGACAAGGAC	AACTTTGGGT	AAAATACCTA	1800
GGTTGTAATA	CGGTCATTGT	TGCCAATGAC	GAAGTAAGCA	CGGACAAGAT	GCAACAAACT	1860
CTGATGAAAA	CAGTTGTGCC	AGACTCAGTT	GCCATGCGTT	TCTTCCCTTT	GCAAAAGGTG	1920
ATTGATATCA	TTCAACAAGC	TAATCCTGCT	CAAACGATCT	TTATCGTTGT	AAAGGATGTG	1980
AAGGACGCTT	TAACCTTGGT	AGAAGGTGGT	GTCACTATCA	AAGAAATCAA	TATTGGGAAC	2040

1191

ATTACACAATG CCCCTGGTAA AGAGCAAGTG ACACGCTCCA TCTTCCTGGG TGAAGAGGAC	2100
AAGGCGGCCC TCAAGGAATT GAGCCAAACT CATCAAGTAA CATTTAATAC GAAAACAACT	2160
CCAACAGGAA ATGATGGAGC TGTTCAGTC AACATTATGG ACTATATTTA ACAGAGGAGA	2220
TCGTTATGTC GATTAATGTA TTTCAAGCGA TTTTAATTGG ATTATGGACA GCTTCTGTGTT	2280
TTAGTGGAAT GCTGTTAGGA ATTTACACCA ATAGATGTAT TGTCTGTCA TTTGGTGTGCG	2340
GAATTATCT AGGTGATCTG TCATGCTCTT GCAATGGGAG CCAATGGTGA ATTGG	2395

(2) INFORMATION FOR SEQ ID NO: 206:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3342 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 206:

CCTTCTTAG AGGTTAATTT TGCAAAATCG TCGATTGTTA TATAAGGATT ATTATAGAGA	60
CTGTTGCGAA AGAATCTCTG ATATGTTTTT GAATCTTTTG AATACAAAAC TATCTCTCTA	120
ATAGCATTGC CATCTGTTCC ATCAATTGGT AACATACCG TAACTAGAAA AAGAATTATA	180
TTCAAAATAA AAAATTCTGA TCGGTACGGC ACAAATCCCA AAAGTGCTAA TATTGCGACA	240
ATTAGGTTAG CTCCACCTCC CCCAAAGAAG TAGAACACCA AATTCCTATC ACTATTTTTT	300
TCATTAGTAA TGTCTTATT ACTCATTTGA CAATAACCGA ATGCTAATAA CACTGGAAT	360
TTGAAATATA TTTTTTTTCT GAAATAGAAG AAAAAGGGAG TAGCAAGCAT CTCTAGTTTA	420
TAGATAAAC ATCTTCCCAC TAAAAAATGA CCTAGTTCAT GTAATGTAAT TGATATTAAC	480
GAAATTAAAA TCAATCGAAA ATAATAGATT AATGAATCAT TTGGAAAAAT TATCAATAAT	540
AGGAACAATA ACGGAATCAA ACATAAATAT ATGACAGAGT TATTTAATAT TTTCAACATA	600
ATACCATTC TCTAACTAT TAGCTTCAAA AAGGCGTTTT TTCTCCCAAT ACATCTTCTC	660
AAAATGTTTC GAATCATAAT TTTCTAAAAT TAATTTTATG TCTGGTAAGC TCTTTCTTGA	720
TAATCCGTG TTTTGTAATT AATTTTCCCT TCAAGTACAT CTTCAATTTT ATAAGTTGCC	780
TCCATCAACT GAGCCTCTGC AATATCTTTG AGTGAATTGG TAATTGAAAC TTGGTGTAAT	840
ATCTGTCTs CCATATATGA AAATATATCT CTAAGATATT CTGACACATT ATCAGAGCCG	900
TTACTCTCAG CAACATCTAA TGTTACAACA AACTTTCCAG CTAATCGAAA AAGATGGCTC	960
CACCCCCCAA TCCTTTCAAT AAAGTTTTTT GTGTCCACAG ATACGTTTTG TAAATATACA	1020

1192

GGAGAAGAGA TAATTATAAT ATCAGACTCT AATAACTCTT TTTTATAAC ACCTCCATCA	1080
TCAGCATTAC TTTGCCTATC AATTCCTTTC TTAAACAACCT CTTCTGAATC AGAATTAGAT	1140
ATTTCTAGCT CTGAATTGAA AGGTGTCCTG AAAGATATAT CAACATTATT TCTACTAGAA	1200
ATGATACTTG AAAGTCTCTT AGTATACTCT AAAGTCTTAG AGTTATGATT TCGCACTCCT	1260
GCATATATAA ATATTTTATT CATTTTAATT CATCCTCTCA ATTTGAATTT AGTAGATTTT	1320
TCAAGATAGT ATGGTACAAA AACAGACTTT TGTGACTCA CATTATTACA TATGTTTTGT	1380
ATTAAACCAA AATCAATACT ATTTTGGAG TAATTTTGAT TTTAGTTTAA AATCATTTCT	1440
ATAACAGTAG CATATACCTC AAGCCGTTTA GCAATTAGAA TAGAACTTTT CTTTATTATA	1500
TTATTATCTC AACGAAAAGC TACACTATTA AAAATATTTT ATAGAATTAC ATATTAACT	1560
AGTCAATCTT GGTATTTTAA TATTGCTTAA TGAGTGGACA CCTCTATTTT AGAAACAAAA	1620
CTATAAATTA AGCTAGATTT CAAGTAATGA GGGGATAACT ATCTTTTGT CATTCTGATT	1680
CAGTGGGATA TACCTTAAAA AAGTATAAGC AATACCAGTC ACACCTGTAT ACAAAGAAAA	1740
ATCTGGGAAA TTGCTTGTTT GGACGATACG ATACTCTCCT TCTTTTGATT TATTCATTAC	1800
AACACTACAC AATAAGACT CCAATCCAT ACTAGTATCC ATTTCTTTCA TGAGTCGAT	1860
GTA AAAATTT ATTATGGCCA TACTTCCATG GCAAAATGTA TCATTATCTA AACTAGCTAC	1920
AATTCCTCT GGAACACTTT GGGGATGATT AACTAATGTC CCAAATCTC CACTACACCA	1980
CTTCAAAGAA TGAATTTGA TTTTCTCCCT AGGAACTAGT TGTAAAATTA ATTCTTTATA	2040
TTTTTTAAGT CTGTCACTT TATAAATATT TTTTAATGTA AAAATTACAC CTGATAGTCC	2100
ATGGCCAAAA CTATATCCAA AATTACTATT ATCTCTCTCG CTTACATCAT TATATAGCGT	2160
ATCACCTAAA CTTAATACTA GCCTTAGAAC ACGTTCCTTC TCTATTCCTC TCCTATAATA	2220
TCTTACCAGT GTATTAATTA AAGGTAGAAG ACCATTAATA TAGTCAGACT TGTTTGAAAC	2280
ACTTGCAAAA TCAGTCTTTT CAAGCTCAGT TAAACACTC TTTATATAAT TTAAGCATGC	2340
GAGAGTATTT GTATCGTAAT CCTCTATAAT GGATAGAACA ATGAAATATC CTATATCCCC	2400
AGTTAAACCA AATGTGGTCT TAGATAAAGA AACAGATGGC GGAATTGCAG ATAACATTTT	2460
ATTGTACAGT TGAGTATATG ATGATTTATC TTTCAATAAT TTTACATAGT ACATAAACAG	2520
TAATATTCCA GCTCTACCCC TATACATATC ATTTmCCCGTT TGTTCAGAC ACCATTTAGA	2580
ACCTTTAAAA TTAACAGGTA TACTCCAAAT TGGATATTCG TCATAAATAT TATTAATAAC	2640
CAAAGAGTCT GCAATATTTT CTACTTCATT ATGCAGAATA GTAACATAAC TTTCATTGG	2700
GAGTTTTTTT CTATTAGATA AGTTTAATTT ATATCCTTTT TTTGCTGAT CAAAGCTTGG	2760
AAAATAAATT TCAATGATAT CAAGTTGCTT TTCTAAATTT TCCAAATTAT TATTAGGTAA	2820

1193

ATATTTTCATA AAATAGTCAT ATCCAGAAAA TTGATGTAGG GAAATAAAAT GATTTCCAAA	2880
ATCATCGTAG ATTTTCATTGA TATTTGTATC TGTATAAAAA ATCGGAATAT CTAATAACCT	2940
CATTTGTTCA CATTCGCTTG CTACAATACC TTGATTAGAA AACTTATTGC TCCAGAGATT	3000
TTCCAATGCT TTTTCTCTAT CTAACATTTT TTCATAAAAA TCAGGATGAT ATAAAAAGA	3060
TAGTACTGAA GCATAGCTAT TTGTGTCTCT AAAAAGTACC CTTGTCTTTA AACCATACAA	3120
GTTTGCTTTT AATAGCATTT TAAATTCTTC TGTTTTATTT AACTCTTCAA ATATCAGATA	3180
AAAATCCCTA AAACCTTTTT TGAAATCTTT TATATACTTA TCAAATCTA TATCACCATC	3240
CCGAACAGGC AGGTTTTTCC CACCTTCAA ATCAATTTTC CCAATATCAA ACTTTACCTT	3300
ATCAGTATTT AAATTAATTA AACTTGACC AGGGATCCTC TA	3342

(2) INFORMATION FOR SEQ ID NO: 207:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3454 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 207:

GAGAAAAGAA TGTAAAGAA AAATGATATT GTAGAAGTTG AAATGTTGA TTTGACCCAT	60
GAAGGGGCAG GAGTTGCCAA GGTAGATGGT TTGGTCTTTT TTGTAGAGAA TGCTTTACCG	120
AGTGAAAAAA TTCTCATGCG TGTCTCAAG GTCAATAAAA AGATTGGCTT TGGAAAAGTT	180
GAAAAATACC TTGTCCAGTC ACCACACCGT AATCAAGATC TAGATTGGC TTACCTGCGT	240
TCAGGAATCG CGGATTTAGG ACACCTTTCT TATCCAGAAC AGCTCAAGTT TAAAACCAAG	300
CAAGTCAAGG ACAGTCTCTA CAAGATTGCT GGAATTGCAG ATGTAGAAGT TGCTGAAACG	360
CTTGGTATGG AACATCCAGT CAAGTATCGC AATAAGGCGC AGGTGCCCCG TCGTCGAGTG	420
AATGGTGTCT TGGAAACAGG ATTTTCCGT AAGAATTCGC ATAACCTCAT GCCCCTTGAA	480
GATTTCTTTA TCCAGGATCC TGTCAATGAC CAAGTCGTAG TAGCTCTTCG AGACCTGCTC	540
CGTCGTTTTG ATTTAAAACC TTATGACGAA AAGGAACAGT CTGGATTGAT TCGGAATCTT	600
GTGGTGCGTC GTGGTCACTA TTCAGGACAA ATCATGGTCG TTTTGGTGAC AACTCGTCCA	660
AAAGTTTTTC GTGTTGACCA ATTGATTGAA CAAGTTATCA AGCAGTTCCC AGAGATTGTG	720
TCTGTATGCG AAAATATCAA CGACCAGAAT ACCAATGCCA TTTTGGGTAA GGAGTGGCGC	780
ACTCTTTATG GTCAAGACTA TATTACGGAC CAGATGTTGG GAAATGACTT CCAAATCGCT	840

1194

GGCCCAGCCT TTTACCAAGT CAATACTGAA ATGGCGGAGA AACTCTATCA AACAGCCATT	900
GACTTTGCAG AGTTAAAAAA AGATGATGTG ATTATTGATG CCTATTCTGG TATTGGAACC	960
ATTGGTTTAT CAGTCGCCAA GCATGTCAAA GAAGTCTACG GTGTTGAACT GATTCCAGAA	1020
GCAGTAGAGA ATAGCCAGAA GAATGCTTCT TTGAACAAGA TTAATAATGC CCACTATGTC	1080
TGTGACACGG CTGAAAATGC CATGAAGAAA TGGCTCAAGG AAGGTATTCA ACCAACCATT	1140
ATCTTGGTTG ATCCTCCACG CAAGGGCTTG ACAGAAAGCT TTATCAAAGC AAGCGCCCAA	1200
ACAGGAGCCG ATCGCATCGC CTATATCTCC TGCAATGTCG CAACCATGGC GCGTGATATT	1260
AAACTATACC AAGAGTTGGG ATATGAATTG AAGAAAGTCC AGCCGGTGGA TCTATTTCTT	1320
CAAACGCATC ACGTCGAGAC GGTAGCACTT TTGTCCAAAC TCGATGTCGA TAAGCACATA	1380
ACTGTTGAAA TTGAGCTGGA TGAGATGGAT TTGACAAGTG CGGAGAGCAA AGCAACATAT	1440
GCTCAAATCA AAGAATATGT TTGGAATAAA TTTGAATTAA AAGTTTCGAC ATTATATATT	1500
GCACAGATAA AAAAGAAATG TGAATAGAA TTACGAGAAC ATTACAACAA GTCTAAAAAG	1560
GATAAACAAA TTATTCACA GTGTACACCT GAAAAAGAAG AAGCCATCAT GGATGCTTTG	1620
AGACACTTCA AAATGATTTA ATAGAAAAGA ATGACAGTAT ATGACTTTCT GCATTTATTA	1680
CATTCCTACT TGGTATAGGA ACAGCTATTA TTCCTTTCTT GCAAGGTATC AATTAGAAAA	1740
TAGGCTCAAT ATAAGATTG ATAGGATCAT TTTTATATTT AAAGGAGCGT TGAAATGATT	1800
GATAAAGCA ACAAAAAATT TTAGGATAAA TTTGCTAAGT TGTATGCCTC TTTTATGAAA	1860
AAAGATAAAG AGGTTTATGA TAAAGTTTGT GAATATCTTA GTCCTCATTT GAATAAGAT	1920
ATGGAGGTGC TTGAACTTGC TTGTTGGTTT CGTGCATAA CAGTTATAGA GGCAAATAGT	1980
TATGTAAATA TAAGGAGTTC AAGACTTCTA CCAAAGTTTA AAACCAAAA AATAAATAGT	2040
TGGTGTGCTG CTTACAATAT CCATTTTAAT AATGGATATT GTAAGCAGCA CCCCcAtGAA	2100
TTTAAAGATT CTTTAAAGAG TCTTATTTTG TGATGAAAAT TTAATATGTA AATCTCAGAC	2160
GATAGAAATT AAAAATCTA TCGTCTTTTT TATACTCAA ATTAGGAGGT AAAAATGGTA	2220
AGGATAAGAG GTCCCACTTA AAACAATTTA TGGCAAAATA AGGACGGAAT AACACAACAA	2280
ATTCTCTAAA ACAATCACT AAATCAATGT AAGATTGAAT GAAATCAATA TTTATGCTAT	2340
AATTAAATAA ATTTAATGAA GAAAAAAGA GGGATATTAT GGCACCTAAC TATAAACCAT	2400
TATGGATACA GTTAGCAAAA AAAGGACTAA AGAAAACAGA TGTAATAGCT ATGGCAGGAC	2460
TTACAACAAA TGTTATGGCA CAAATGGGAA AGGATAAACC AATTACATTT AAGAATTTAG	2520
AAAGAATATG TAAGGCTTTA TCTTGCACTC CTAATGATAT TATTAGTTTT GAAGATAATT	2580
TTAGTGACGA GGAATAGAAA ATGACTTTAA GGACAGAAGA TCAAGTTAGG GATTATGCAA	2640

1195

GAGAAGTATA GGCTTTAATG AAGTTGAAGA AAACATCAAT CAAGGTACTG GTCAAATAAC 2700
TACTTTTAAT CAATTAGGCT TCAAGGGATA TTCAAATAAG CCAGATGGTT GGTATTTACC 2760
TAAAAATATG AATGATGTAG CAATAATCCT TGAAACAAAA TCAGAAGAAA GAGATATTAG 2820
CAAACAAATT TTTATTGATG AGTTAATGAA AAATATAGAC ATAATTTAAC TAAAAATAAA 2880
AACTAGATCC TTTTTTGAAA AAATTATATT ATTAAATTTG TAACTGTATC TATTGACAAT 2940
GATAATTATT ATCGATACAA TAGACTTGAA ATATGTTTAA GGAGTTTTTA TGAAAaCAAA 3000
TTTTTTCTAA TmGCTATTTT AGCTATGTGT ATAGTTTTTA GCGCTTGTTT TTCTAATTCT 3060
GTTAAAAATG AAGAAAATAC TTCTAAAGAG CATGCGCCTG ATAAAATAGT TTTAGATCAT 3120
GCTTTCGGTC AAACATATT AGATAAAAAA CCTGAAAGAG TTGCAACTAT TGCTTGGGGA 3180
AATCATGATG TAGCATTAGC TTTAGGAATA GTTCTGTTG GATTTTCAAA AGCAAATTAC 3240
GGTGTAAGTG CTGATAAAGG AGTTTACCA TGGACAGAAG AAAAAATCAA AGAACTAAAT 3300
GGTAAAGCTA ACCTATTTGA CGATTGGAT GGACTTAACT TTGAAGCAAT ATCAAATTCT 3360
AAACCAGATG TTATCTTAGC AGGTTATCT GGTATAACTA AAGAAGATTA TGACACTCTA 3420
TCAAAAATTG CTCCTGTAGC AGCATACAAA TCTG 3454

(2) INFORMATION FOR SEQ ID NO: 208:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 3752 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 208:

CGGGAGTATA CTTAATATAA TTATAGTCTA AAAATGACTA TCAGAAAAGA GGTAATTTA 60
GATGAATAAG AAAAAAATGA TTTTAACAAG TCTAGCCAGC GTCGCTATCT TAGGGGCTGG 120
TTTTGTTACG TCTCAGCCTA CTTTGTGAAG AGCAGAAGAA TCTCCACAAG TTGTCGAAAA 180
ATCTTCATTA GAGAAGAAAT ATGAGGAAGC AAAAGCAAAA GCTGATACTG CCAAGAAAGA 240
TTACGAAACG GCTAAAAAGA AAGCAGAAGA CGCTCAGAAA AAGTATGAAG ATGATCAGAA 300
GAGAACTGAG GAGAAAGCTC GAAAAGAAGC AGAAGCATCT CAAAAATTGA ATGATGTGGC 360
GCTTGTTGTT CAAAATGCAT ATAAAGAGTA CCGAGAAGTT CAAAATCAAC GTAGTAAATA 420
TAAATCTGAC GCTGAATATC AGAAAAAATT AACAGAGGTC GACTCTAAAA TAGAGAAGGC 480
TAGGAAAGAG CAACAGGACT TGCAAAATAA ATTTAATGAA GTAAGAGCAG TTGTAGTTCC 540

1196						
TGAACCAAAT	GCGTTGGCTG	AGACTAAGAA	AAAAGCAGAA	GAAGCTAAAG	CAGAAGAAAA	600
AGTAGCTAAG	AGAAAATATG	ATTATGCAAC	TCTAAAGGTA	GCACTAGCGA	AGAAAGAAGT	660
AGAGGCTAAG	GAACCTGAAA	TTGAAAAACT	TCAATATGAA	ATTTCTACTT	TGGAACAAGA	720
AGTTGCTACT	GCTCAACATC	AAGTAGATAA	TTTGAAAAAA	CTTCTTGCTG	GTGCGGATCC	780
TGATGATGGC	ACAGAAGTTA	TAGAAGCTAA	ATTAAAAAAA	GGAGAAGCTG	AGCTAAACGC	840
TAAACAAGCT	GAGTTAGCAA	AAAAACAAAC	AGAACTTGAA	AAACTTCTTG	ACAGCCTTGA	900
TCCTGAAGGT	AAGACTCAGG	ATGAATTAGA	TAAAGAAGCA	GAAGAAGCTG	AGTTGGATAA	960
AAAAGCTGAT	GAACCTCAAA	ATAAAGTTGC	TGATTTAGAA	AAAGAAATTA	GTAACCTTGA	1020
AATATTACTT	GGAGGGGCTG	ATCCTGAAGA	TGATACTGCT	GCTCTTCAAA	ATAAATTAGC	1080
TGCTAAAAAA	GCTGAGTTAG	CAAAAAAACA	AACAGAACTT	GAAAAACTTC	TTGACAGCCT	1140
TGATCCTGAA	GGTAAGACTC	AGGATGAATT	AGATAAGAA	GCAGAAGAAG	CTGAGTTGGA	1200
TAAAAAAGCT	GATGAACTTC	AAAATAAAGT	TGCTGATTTA	GAAAAAGAAA	TTAGTAACCT	1260
TGAAATATTA	CTTGGAGGGG	CTGATTCTGA	AGATGATACT	GCTGCTCTTC	AAAATAAATT	1320
AGCTACTAAA	AAAGCTGAAT	TGGAAAAAAC	TCAAAAAGAA	TTAGATGCAG	CTCTTAATGA	1380
GTTAGGCCCT	GATGGAGATG	AAGAAGAAAC	TCCAGCGCCG	GCTCCTCAAC	CAGAGCAACC	1440
AGCTCCTGCA	CCAAAACCAG	AGCAACCAGC	TCCAGCTCCA	AAACCAGAGC	AACCAGCTCC	1500
TGCACCAAAA	CCAGAGCAAC	CAGCTCCAGC	TCCAAAACCA	GAGCAACCAG	CTCCAGCTCC	1560
AAAACCAGAG	CAACCAGCTA	AGCCGGAGAA	ACCAGCTGAA	GAGCCTACTC	AACCAGAAAA	1620
ACCAGCCACT	CCAAAACAG	GCTGGAAACA	AGAAAACGGT	ATGTGGTATT	TCTACAATAC	1680
TGATGGTTCA	ATGGCAATAG	GTTGGCTCCA	AAACAACGGT	TCATGGTACT	ACCTAAACGC	1740
TAACGGCGCT	ATGGCAACAG	GTTGGGTGAA	AGATGGAGAT	ACCTGGTACT	ATCTTGAAGC	1800
ATCAGGTGCT	ATGAAAGCAA	GCCAATGGTT	CAAAGTATCA	GATAAATGGT	ACTATGTCAA	1860
CAGCAATGGC	GCTATGGCGA	CAGGCTGGCT	CCAATACAAT	GGCTCATGGT	ACTACCTCAA	1920
CGCTAATGGT	GATATGGCGA	CAGGATGGCT	CCAATACAAC	GGTTCATGGT	ATTACCTCAA	1980
CGCTAATGGT	GATATGGCGA	CAGGATGGGC	TAAAGTCAAC	GGTTCATGGT	ACTACCTAAA	2040
CGCTAACGGT	GCTATGGCTA	CAGGTTGGGC	TAAAGTCAAC	GGTTCATGGT	ACTACCTAAA	2100
CGCTAACGGT	TCAATGGCAA	CAGGTTGGGT	GAAAGATGGA	GATACCTGGT	ACTATCTTGA	2160
AGCATCAGGT	GCTATGAAAG	CAAGCCAATG	GTTCAAAGTA	TCAGATAAAT	GGTACTATGT	2220
CAATGGCTTA	GGTGCCCTTG	CAGTCAACAC	AACTGTAGAT	GGCTATAAAG	TCAATGCCAA	2280
TGGTGAATGG	GTTTAAGCCG	ATTAAATTAA	ATCATGTTAA	GAACATTTGA	CATTTTAATT	2340

1197

TTGAAACAAA GATAAGGTTC GATTGAATAG ATTTATGTTC GTATTCTTTA GGTACCTATC	2400
TTATGATTTT AGGAAATGTC ATTAAAAAAA CGACTCATTT TCTCTAACCT GAAAAATAGA	2460
TTAGAGAAAA TGGGTTGTTT TATCTATTAT AGTTATTTGA ATGAAGmTAA GAAGAAGGTA	2520
TACTCACATC ATTCACATAA TCTGTATATT GACTATAAGT TTTAAAAAAC AATTTTTAAG	2580
CTCTTCCTTG TCTTCTCTAA CCAAGCGTGT TATAATGAAT ACTGCTCAAG CGACCTTCAA	2640
TCGTGAAGCA CACACGACCT TCAATCGTGA ATAAACGAAT AGATGGGAGA CTTACCATGA	2700
GTGATAACTC TAAACACGT GTTGTCTGCGG GGATGAGTGG TGGTGTGAT TCGTCGGTGA	2760
CGGCTCTTTT GCTCAAGGAG CAGGGCTACG ATGTGATCGG TATCTTCATG AAGAACTGGG	2820
ATGACACAGA TGAAACGGC GTCTGTACGG CGACCGAAGA TTACAAGGAT GTGGTTGCGG	2880
TGGCAGACCA GATTGGCATT CCTACTACT CTGTCAATTT TGAAAAAGAG TACTGGGACC	2940
GCGTTTTTGA GTATTTCTTA GCGGAATACC GTGCAGGGCG CACGCCAAAT CCGGACGTTA	3000
TGTGCAACAA GGAAATCAAG TTCAAGGCCT TTTTGGACTA TGCCATAACC TTGGGGGCGAG	3060
ACTATGTAGC GACTGGGCAT TATGCTCGAG TGGCGCGTGA TGAGGATGGT ACCGTTTACA	3120
TGCTTCGTGG CGTGACAAT GGCAAGGATC AGACCTATTT CCTCAGCCAA CTTTCGCAAG	3180
AACAACTTCA AAAAACCATG TTCCCACTAG GACATTTGGA AAAGCCTGAA GTACGCAGAC	3240
TAGCAGAAGA AGCAGGCCTT TCGACTGCTA AGAAGAAAGA CTCGACAGGG ATTTGCTTTA	3300
TCGGAGAAAA GAACTTTAAA AACTTTCTCA GCAACTACCT GCCAGCTCAG CCTGGTCGCA	3360
TGATGACTGT GGATGGTCGC GATATGGGCG AGCATGCAGG TCTTATGTAC TATACAATCG	3420
GTCAGCGTGG CGGACTCGGT ATCGGTGGGC AACACGGCGG TGACAATGCC CCTTGGTTTCG	3480
TTGTCGGAAG AGATCTAAGC AAGAATATTC TCTATGTAGG ACAAGGATTC TACCATGATT	3540
CGCTCATGTC AACTAGCCTA GAAGCCAGTC AAGTCCACTT TACTCGTGAA ATGCCAGAAG	3600
AGTTTACGCT AGAATGTACG GCTAAATTCC GTTACCGTCA GCCTGACTCT AAGGTGACCG	3660
TTCATGTCAA AGGAGAAAAG ACAGAGGTCA TCTTTGCGGA ACCACAACGC GCGATTACAC	3720
CAGGACAGGC AGTTGTCTTT TACGATGGCG GG	3752

(2) INFORMATION FOR SEQ ID NO: 209:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 3580 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

1198

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 209:

TATTTATATT TTTTATCTC TGGCATACTT TGATACCTTT TTAGACTTAA AGTCTTTAAT	60
AGTGCCTTTC CACCTCTTTT TATCTATAAA GATTCTCCTA CATCATAAAT CATTPTTTTA	120
TTTAAACCTT TCTGTCTTAG TTTGTCTTTA TCTTCTTCAT ACCATTTTAA GATTGTCACA	180
TAGTGGTTTT GATAGGTCTT ACCACTGCTT TCCATGTATC TGGATAGTTT ATTTATCATT	240
ATATCTGTGT GTGAGTTTAA TTTTCTTTT AGATTTTAT ATTCTTCTT GCTTAACCTT	300
ACATTTTGA ATTTCCATA AAAAATGGGG GTGGACTTTT TATCTATCTC TCCCTCTCTC	360
TCTTTATCTA TCTCTATATC TTTCCATGTA ATTCCAATCT GGAGTACCTC TACTGTCTAT	420
CGGTAATTTA ATTTTGATAT CTGGCAATAC TGTGCTAGAT ATTTGATCTT TATATTCAGT	480
ATTTTAAAG GCTTGCCTAA TAATTGAAGT TAAATAGAAT GCTACTTCTT TATTCAATTC	540
TTTATTTTTT AATTTTAAAC AATGAATTTT CATATCTAGG CTGCTTTAT ATTTATGATA	600
AAAGACTGCT CCTAAAAATG AAACAGATAT AAAATTTTCA AAAACTCTAT AATTTTATC	660
ATCTATATCT TCGTAGTAAC CTAAGATACC ATTGTCAATA TTTGTAGCAC TAATTCTAGG	720
AGTTTTTCCA TCGAGTAAAT ATCTTTTTGG AATAGATGAG CCTGTTGGTA CTTAACTCGA	780
TTTCCCTTTT TTTTCGGTAA TAAATATTTC TTTTATTTT GTTGTCTGAT ATTTTTCCTA	840
CCTGTCTTTT GTAGGATGAG TATTTCTAG ATTTTCyTGA ATAACTTTTT ACTTGAAGTT	900
TTAGCTTTTG AACTAGTCGT TGTACTTTCT TTTTGTATAT TATCAGTCCT GATCTTTTTA	960
ATATTGCTGT TATTCTCTAT ATCCTATTTT TCATTCATGA TATTCTTTTA CTAATTTTAT	1020
CTTAAATCTT GTGCTGTATT TGCCATTAAA AACTGACCT CCTTTAGTTA GTTTTTTGGC	1080
CTAACTTTTG AGGGTCAGTT CAAAATTGTC GACTTTTAAA TGAATCCAA TATTCAATTA	1140
TTAAGAGTTA ACATGGTGCT TGCCAATAGG AATCATTAGA GGCGAATTGG AAATAGGGTC	1200
ACGTATAAAT TTTGCTTCAA GATTAAAGAT ATCTTTAACT AGTTTATCAT TTAGTATATC	1260
TTCAGGCTTT CCCTCTGCAA CAAGTTTACC TTCTTTAATT GCAAATAGGT AATCAGCGTA	1320
TCTTGCTGTT AGATTTATAT CGTGCAAAAT CATGCAAATG GTTGTCTTAT ATTTTGGTT	1380
TAGATCAGTC AAGAGGTCTA ATAGTTCTAT TTGATATGAG ATATCCAAGT AAGTAGTTGG	1440
CTCATCTAAA AGTAGGATAC TTGTATCTTG GGCTAGGGCT AGAGCTATCC ATACTCTTTG	1500
CCTTTGACCC CCAGAAAGTT CTTCAACTAG GTTATTTGCT AGATCTTCAA CATTGGCCTT	1560
AACCATTGAT CTGTTTATTA TTTCAAGGTC ATCTTTTCCA AGACTCTTAA AAGGCTTTCT	1620
GTAGGGGAAA CGACCACGGC TTACAAGATC AGCTACTGTT ATTGATTCAG GGATTATTGG	1680
AGATTGAGGT AATATAGCTA TGTGTTTTGC TAAATCTTTT TCTTTATAAG AATTAATTGA	1740

1199

TTTATTATCA AGCAATACTT CTCCCTCTAA TGGCTTTATA AGTCGAGACA AGGTTTTAAT	1800
GAGTGTGAT TTCCCACAAC CATTTGACCC AATAATAACT GATATTTTTT CTTCAGGTAT	1860
TTTTATATTT ATATTTTCCA AGATTATTTT TTCATCATAA CCGCAGGTAA GATTATTTGA	1920
CCACAGACCT TTCATTATAT ATTCCTCCTG TTCATTTTTA TTAGTAAGTA TATTAAGTAT	1980
GGTGAACCTA ACAAGCCAGT TACAACACCT ACTGGATATC TAGCTGGTAA AATATTTTGA	2040
GAGAATATGT CTGATAACAA AACTAGTAAA ATTCCAACCA ATCCAGCTAA TATTGGGCTT	2100
CTTTCTTGC CAATATTTAA GGCTATGGGA CCAGCTAAAA AAGATATACA AGCTATTGGT	2160
CCTGTAATTG AAGTAGAAAA AGCAGTAAAA GATACAGCGC AAAAAATTAA AACAAGCCTT	2220
GAAAGCTCGG GATTTGCTCC AAGTCCGATT GCTATTTCTT CACCAAGTTC AATAATTTCT	2280
AGTCTTTTAT TAAAAAATAA AACTAATATA GTAGCAATAA TACTTACTAT TAGAACAAGA	2340
GGTATGTCAT CTAAC TTGT AAAAGATAAA GAGCCACTGA GCCATCTCAT AACTTCTTGT	2400
AATTCATATC TTGCTACTTT CAACAATAAA AATGAGGTGC CTGCTCTTGT GACAGCTTGA	2460
AAACCAATAC CTAATATTAT CAGTCTTGCT GCTGAAAAAC CATCTTTTTT AGCTAGTAAA	2520
AATAATATTA AAGATGATGT TAGTCCACAA GTTATTGAAA TAATCCAGT AGTTAAACTA	2580
TTTGTTTTTA ATACCAATAT GCAAAAGACC GCTGCAATAG ATGAAGAACT TGTGACACCG	2640
ATTATATCAG GACTTGCAAG AGGATTCTT AACATAGTTT GAAAGATAAA TCCTGCCAAT	2700
CCAAAAGACC AGCCAGCTAT AATTCCTGCT AATAATTTTG GTAATCTAAT TTCCATAATC	2760
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TAAC TTTCAT CTCCGATAAG TAAATGAAA AATGATAGAC TGATTATTAT TAATAAAAAAT	2880
AGTGAGGAAA ATAGTGTAT TCTATTTTTT CTTTTTTGAA TACCTATAAT TAAATTTTGC	2940
ATTAGTTATT AACCCCTCTA TTTTTCATAG TTACATAAAT AAGTACTGGA CCCCCGATTA	3000
TTGCAGTAAT TATCCCTACT TCAATTCAC CTGGTTTACC TAACATACGG CCGATTATAT	3060
CACATATAAG CAAGAGCTCT GCACCTATAA AAGATGAAGA AATGGTCATT GTGCGTATAT	3120
CTTTGCTTAT AAATAAGCCA CAAAAGTGAG GAACTATAAG ACCTACGAAG CCAATAGGTC	3180
CACCAATTGC AGTAATACTT GAACATAAAA GCACACTTGC AATTATTGCA AGTGATCTTA	3240
TCCTATTAAAC ATTAAC TCCA AGACCAACAG CCATTTCATC ACCCATAGCT AAAGCGTTTA	3300
AATCTGATGA AATAAATATA GCTATCAAGT GACCTAAAAT TATAAAAGGT AGTAGTGTAG	3360
ATATAGAAGA TAATGTAGCT GCTCCAAGGC TACCTATTTG CAAAATCTA AATTTGTCTA	3420
AGACGTTATT ATTCGGTAAA ATTA AAAAAC TTACAAAAC GCTTAAAGCC ATACTAACAC	3480

1200

AAGTTCCTGA TAAGGCAAGT TTTATAGGGG TAAGGCCTGC TTTTCCGTTA CAGCAATCGC	3540
GTATACAAAA ATTGCACTTA CTAAGCCACC AATGATTGCG	3580

(2) INFORMATION FOR SEQ ID NO: 210:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11378 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 210:

CCAAATTGCT CCACAATTAT TATGGAGTCG TCGTTTGGCA GATGGGCGTG ATATGTGTGC	60
TCAAGAATGG TTGACAGGCA AGATATTGAC CCCCTATGAT ATGAATCGTA AGCAAATCGT	120
CAATATTTTA ACCCGTCTTC ATCGCTCACG TCCGTTGATG ACACAATTGA GTCGTTTGGG	180
CTATGCCATG GAAACACCTG TAGATTTACT ACAGTCTTGG CAGGAAACGG CTCCAGATGC	240
TTTGCGTAAA AATCATTTTA TCAGTGAAGT GATGGCTGAT TTACGTCAGA CTATTCCAGG	300
ATTTAGAGAG GACCATGCGA CCATTGTCCA TGGAGATGTA CGACATAGTA ATTGGATTGA	360
GACAGATAGT GGCTTGATTT ATTTAGTAGA TTGGGATTCG GTTCGCTTGA CCGATCGCAT	420
GTTTGATGTG GCCCATATGC TCTGCCATTA TATTTAGAA CATCAGTGGA AGGAATGGTT	480
GACCTACTAC GGTTACAAGT ACAATCAAAC GGTATTAAGT AAATTGTATT GGTATGGTCA	540
ATTGCTCTAT TTGAGTCAGA TTTCCAAGTA TTATATGAAC CAAGATTTAG AAAATGTCAA	600
TCGGGAGATT CATGGTTTGC GTCATTTCAG AGACAAGTAT GGAAAGAGAA GATGAGAGTT	660
AGAAATCGTA AAGGGCAAC AGAATTACTA GAGGCAAATC CCCAGTATGT GGTCTCTCAAT	720
CCCTTGGAAG CCAAGGCAAA ATGGCGGGAC TTGTTTGGCA ATGATAATCC CATTGATGTG	780
GAAGTTGGAA GTGGAAGGGG TGCCTTTGTT TCAGGTATGG CCAAGCAAAA CCCTGACATC	840
AACTATATCG GGATTGATAT TCAAAAGTCT GTTTTGAGCT ACGCTTTGGA CAAGGTGCTT	900
GAAGTTGGAG TGCCTAACAT CAAGCTCTTG TGGGTAGATG GTTCTGACTT AACTGACTAC	960
TTTGAAGACG GTGAGATTGA TCGCTTGAT CTGAACTTTT CAGATCCATG GCCGAAAAAA	1020
CGCCATGAAA AGCGTCGTTT GACCTACAAG ACCTTCTTGG ATACCTTCAA ACGTATCTTG	1080
CCTGAAAATG GAGAAATCA TTTCAAGACG GATAACCGTG GCTTGTTTGA GTACAGTTTA	1140
GTGAGCTTTT CTCAATATGG CATGAAATC AATGGTGTCT GGTTAGATTT GCATGCCAGT	1200
GATTTTGAAG GCAATGTCAT GACAGAATAC GAGCAAAAAT TCTCAAACAA GGGGCAAGTT	1260
ATCTACCGAG TTGAGGCAGA ATTTTAAGAG ATAACCTAAA ATTAGGCTGT ACAAGTGCTT	1320

1201

TTGCTTTACA TAAGTTGGCA AACGTGCTAT ACTGATAGTA AGAATATGAA AAGTGAGGCG	1380
GGGAAATATC TTCGCCTCTT GCTTATGAGG AGGTGGACGC AATCGCAACA ATCGTAGAAT	1440
TAGTCAGAGA AGTTGTAGAA CCTGTCATAG AAGCTCCTTT TGAACTCGTG GATATCGAGT	1500
ATGGAAAGAT TGGCAGTGAC ATGATTCTCA GTATTTTGTG AGATAAAGCC GAAGAATTAC	1560
CTTGAACGAC ACGGCAGACT TGACAGAAAT TATCAGTCCT GTCCTAGACA CCATCAAGCC	1620
AGATCCCTTC CCAGAACAAAT ATTCCTAGA AATTACCAGT CCAGGTTTGG AACGTCCTTT	1680
GAAAACCAAG GATGCCGTCG CTGGAGCGGT TGGAAAATAC ATCCATGTCG GGCTCTACCA	1740
AGCCATCGAT AAGCAAAAGG TCTTTGAAGG AACCTTGTG GCCTTCGAAG AGGACGAGTT	1800
GAATATGGAA TATATGGACA AGACGCGTAA GAAAACCGTC CAAATTCCAT ACAGTTTAGT	1860
ATCAAAAGCA CGTTTAGCAG TTAAATTATA GAAAAGAAA GGATAGCTTT TGAGGATTCA	1920
AAAGTGAAGA AAACATGAGT AAAGAAATGC TAGAGGCCTT CCGCATTTTG GAAGAAGACA	1980
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GCAGACGCTA TGGTCAGTCA GACAGCGTAG CTATTGACTT CAACGAAAAA ACAGGTGACT	2100
TTACAGTTTA TACTGTCCGT GAAGTTGTG ATGAAGTATT TGATAGCCGT TTGGAAATCA	2160
GCTTGAAAGA TGCTCTTGCC ATTAATTCAG CTTATGAACT TGGAGACAAA ATCAAGTTTG	2220
AAGAAGCACC AGCTGAGTTT GGTGCTGTAG CAGCCCAATC TGCCAAACAA ACCATCATGG	2280
AAAAATGCG CAAGCAAACA CGTGCCATCA CTTACAATAC TTACAAAGAA CATGAGCAAG	2340
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GCATCGAAGC CCAATTGTCA AAACAAGACC AAATCCTGG AGAAGTTTTT GCTTCTCATG	2460
ATCGTATCGA AGTTTATGTT TACAAGGTTG AAGACAACCC TCGTGGTGTG AACGTCTTTG	2520
TTAGCCGTAG TCATCCAGAA ATGATCAAAC GTTTAATGGA GCAAGAAATT CCAGAAGTTT	2580
ATGATGGAAC TGTGAAATC ATGAGCGTGG CTCGTGAAGC AGGTGACCGT ACGAAGGTTG	2640
CTGTTCTGAG CCACAATCCA AACGTGGATG CTATCGGTAC AATCGTTGGA CGTGGTGGTG	2700
CTAATATCAA GAAGTTACT AGCAAATTC ACCCAGCTCG TTACGATGCT AAAAATGACC	2760
GCATGGTACC AATCGAAGAA AATATCGATG TTATCGAGTG GGTAGCAGAT CCAGCTGAAT	2820
TTATCTACAA TGCCATCGCT CTGCTGAGG TTGACCAAGT TATCTTTGAT GAAAACGACA	2880
GCAAACGTGC CTTGGTGGTT GTTCCAGATA ACAAGCTTTC TCTTGCCATT GGTGCTCGTG	2940
GACAAAACGT GCGCTTGGCG GCTCACTTGA CTGGTTACCG TATCGATATC AAGTCTGCTA	3000
GCGAATTTGA AGCCATGGAA GACGCTGCTT CAGTAGAGTT GGAAGTAGAA AACGATACTG	3060

1202

TAGAAGAATA AAAGCTGCTA GAGGAGGGAA AGATGAAAAC AAGAAAAATC CCTTTGCGCA	3120
AGTCTGTTGT GTCTAACGAA GTGATTGATA AGCGTGATTT GCTCCGCATT GTCAAGAACA	3180
AGGAAGGACA AGTCTTTATT GATcCTACGG GCAAGGCCAA TGGCCGCGGC GCTTATATCA	3240
AACTAGACAA TGCAGAAGCC CTAGAGGCGA AAAAGAAGAA GGTCTTTAAC CGCAGCTTTA	3300
GCATGGAAGT GGAAGAAAGC TTTTATGACG AGTTGATCGC TTATGTGGAT CACAAAGTGA	3360
AAAGAAGAGA GTTGGGACTT GAATAAGCAA AAGATAAGTA ATCTCTTGGG GCTTGCTCAG	3420
CGAGCAGGGC GCATCATATC GGGTGAAGAA TTGGTGGTCA AGGCCATTCA AGACGGCAAG	3480
GCCAAGTTGG TCTTTCTAGC TCATGATGCT GGACCCAATC TGACCAAGAA GATTCAAGAT	3540
AAAAGTCATT ATTATCAAGT AGAAATTGTA ACCGTGTTTT CAACACTGGA ATTAAGCATA	3600
GCAGTCGGGA AATCGAGAAA GGTTTTGGCT GTAACAGATG CTGGATTAC AAAGAAAATG	3660
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CGCAAAAGAA CTTGGAAGAA AAAGTAAAGA AGTTGTAGCG CGTGCAAAAG AGTTGGGCTT	3780
GGATGTGAAA AGCCACTCAT CAAGTGTGGA AGAAGCTGTC GCTGCAAAAA TTGCTGCCAG	3840
CTTTAAGCCT GCAGCTGCTC CGAAAGTAGA AGCAAAACCT GCAGCCCCAA AAGTAAGTGC	3900
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CTTTAATGAC CAAGCTAAGA AGCAGCAAGG TCAGCAAAAA CGTAGAAATG AGCGCCGTCA	4320
GCAAGAGGAT AAACGTTCAA ATCAAGCGGC TCCACGTATT GACTTTAAAG CCCGTGCAGC	4380
AGCCCTAAAA GCAGAGCAAA ATGCAGAGTA CGCTCGTTCA AGTGAGGAAC GCTTCAAGCA	4440
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CTTTGAAGAA GCGGCTAAGT TAGCTGAACA AGCACAGCAA GTTCAAGCAG TGGTTGAAGT	4560
CGTCCCTGAG AAAAAAGAAC CTGCAGTGGG TACACGTCGT AAAAAACAAG CTCGACCAGA	4620
CAAAAATCGT GACGATTATG ATCATGAAGA AGATGGTCCT AGAAAACAAC AAAAGAATCG	4680
AAGTAGTCAA AATCAAGTGA GAAATCAAAA GAATAGTAAC TGGAATAACA ACAAAAAGAA	4740
CAAAAAGGC AATAACAAGA ACAACCGTAA TCAGACTCCA AAACCTGTTA CGGAGCGTAA	4800
ATTCCATGAA TTGCCAACAG AATTTGAATA TACAGATGGT ATGACCGTTG CGGAAATCGC	4860

1203

AAAACGTATC AAACGTGAAC CAGCTGAAAT TGTTAAGAAA CTTTTCATGA TGGGTGTCAT	4920
GGCCACACAA AACCAATCCT TGGATGGGGA AACAAATTGAA CTCCTCATGG TGGATTACGG	4980
TATCGAAGCC AAACAAAAGG TTGAAGTGGA TAATGCTGAC ATCGAACGTT TCTTTGTGCA	5040
AGATGGTTAT CTCAATGAAG ATGAATTGGT TGAGCGTCCA CCAGTTGTTA CTATCATGGG	5100
ACACGTTGAC CACGGTAAAA CAACCCTTTT GGATACTCTT CGTAACTCAC GTGTTGCGAC	5160
AGGTGAAGCA GGTGGTATTA CTCAGCATAT CGGTGCCTAC CAAATCGTGG AAAATGGTAA	5220
GAAGATTACC TTCCTTGATA CACCAGGACA CGCGGCCTTT ACATCAATGC GTGCGCGTGG	5280
TGCTTCTGTT ACCGATATTA CGATCTTGGT CGTAGCGGCA GATGACGGGG TTATGCCTCA	5340
GACTATTGAA GCCATCAACC ACTCAAAAGC AGCTAACGTT CCAATCATCG TAGCTATTAA	5400
CAAGATTGAT AAACCAGGTG CTAACCCAGA ACGCGTTATC GGTGAATTGG CAGAGCATGG	5460
TGTGATGTCA ACTGCTTGGG GTGGAGATTC TGAATTTGTT GAAATTTTCGG CTAAATTCAA	5520
CCAAAATATC GAAGAATTGT TGGAAACAGT CCTTCTTGTG GCTGAAATCC AAGAACTCAA	5580
AGCAGACCCA ACAGTTCGTG CGATCGGTAC GGTATCGAA GCGCGCTTGG ATAAAGGAAA	5640
AGGTGCGGTC GCAACCCTTC TTGTACAACA AGGTACCTTG AATGTTCAAG ACCCAATCGT	5700
TGTCGGAAAT ACcTTCGGTC GTGTCCGTGC TATGACCAAC GACCTTGGTC GTCGTGTAA	5760
AGTTGCTGGA CCATCAACAC CAGTCTCTAT CACAGGTTTG AACGAAGCAC CGATGGCGGG	5820
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CAAACGTGCC CTCATGAAAC AACGTCAAGC TACCCAACGT GTTAGCCTTG AAAACCTCTT	5940
TGATACCCTT AAAGCTGGGG AACTCAAATC TGTTAATGTT ATCATCAAGG CTGATGTACA	6000
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AGAAGCTGAC GATGTGGAAA TCCGTCTTCA CAGCATTATC TACAAGGTTA TCGAAGAGAT	6240
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CAACGGTAAG GTTGCCCGTG ACTCTAAAGT CCGTGTTATC CGTGATGGTG TCGTTATCTA	6420
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TCGTGAAGGT GGATTGATGA TCGACGGCTA CAATGATATT AAGATGGATG ATGTGATTGA	6540
GGCGTATGTC ATGGAAGAAA TCAAGAGATA AGATTTTTTG CTCCTTTCTT AGGTGGTGAG	6600

1204

GGACGCAAGC AAACCGATGG TTTCATTGCT TATTTTGTAG CCTAGGGTCT CAAAAATCCC	6660
CTGTGATGGG ACTGATAAAT CAGTTCCATC ACTTTCACCA CGGCGAAAGA AGCAGATGAC	6720
TTCAAATTGA ACTTCGTTTC AATTTAAACT GAAAATCAAG AAGTTTAAAA TAGCTAGGTC	6780
TGCTGGCCTA GCTTTTGGTT CAAAGTAGAG AAAGGAATAT CATGGCAAAT CATTTCCGTA	6840
CAGATCGTGT GGGCATGGAA ATCAAGCGTG AAGTCAATGA GATTTTGCAA AAGAAAGTCC	6900
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TTGCCAAGGT TTATTACACC ATTTTGAGTA ACCTTGCTTC GGATAACCAA AAAGCCCAA	7020
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ACAAAATCCC AGATTTGACC TTCGTCAAAG ACGAGTCCAT CGAGTATGGA AACAAAGATTG	7140
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GGAGGAAAT AGGTGAATT TGAAATGGAA AAATATCTT TTATAATAGA TTGAAACTAG	7260
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TCCAAAAGAT ATTCTACCT TATTGGAACA AGGTCCAACG ACTCTTCTAT CTCAAGAAAT	7620
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TGGGGAAACT TTTTATTGCC GACAAGTTAA TGGATACGGC TCGGTGGCTC ATTAAGCCAG	8400

1205

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GGATTGTGAA ATTCTTTTGG ATGATCATCT CTTTTCAGT CCAATTGCTG TTTTACAAGA	8520
TAGTGTTTAA GATATTGGAT TGGCTCTTTA AACTTATCTA GATGGTAATC CAAGTTGCAG	8580
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TAGTCAACAG GCTTTTGGTA ATGGCTATCT TTCAGTCGAG CAGGCCAATC TCATCCTCAA	10080
TCATCTCCCT ATGGAGATTA CCTTTGTCAA TAAAGAAGAT ATTTTCCAGT ATTACAATGA	10140

1206

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TGAGGGAAGC AAAGACAAGT ATGAAATGTG GTTCAAGTCT GAGTCGCGAG GTAAGTTTGT	10320
CCACATCACC TATGCTGCAG TACACGATGA AGACGGAGAA TTCCAAGGAG TGTGGAGTA	10380
TGTTCAAGAT ATCCAGCCCT ACCGTGAGAT TGATACGGAC TATTTTCGTG GATTAGAATA	10440
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ACCAAAGAGC AAGCTCAAAA AGTAGCTAAT TCTGTAGAAG ATTTTGCAGC AAATTTGGGT	11040
GGACTTCCAC TTGATCGTGC CAAGACTTTC TATGATGAAG GAATCAAGTC TGCTTCAGAT	11100
TTCAAAAACT GGAAGTAAAA AGAACTCCTT GCCTTGAAAG GAATCGGCCC AGCTACCATC	11160
AAGAAATTGA AAGAAAATGG CATCAAGTTC AAGTAATTTT TCTTGAGCCT TGCATTTCCG	11220
AAAAAATCTT GCTACAATAG AGCCATTAGA GGTGTTTGA ATCCCACATT TTACAGAAAG	11280
TGGCGGCGCT GAGAAGTCCA CAAATGTGTC AAAACTGGTT GCTAATGGAT GAAAAATTGA	11340
AATAAAAGTG TCTTTTGCT TTAAAGACGA GAGTTGCG	11378

(2) INFORMATION FOR SEQ ID NO: 211:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 4156 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 211:

CCGCGAGCCA CGGCGAATTT GCTGCGGGTA TTCATCAGTC AGGATCTATG ATCTTTGGTG	60
AACAAGAAAA GGTTCAGTT GTGACCTTTA TGCCAAATGA AGGTCCTGAT GATCTATACG	120
CTAAGTTTAA TAACGCTGTT GCTGCATTG ACGCAGAAGA TGAGGTTCTA GTTTTGGCTG	180

1207

ACCTTTGGAG TGGTTCTCCA TTTAACCAAG CTAGTCGCGT GATGGGAGAA AATCCTGAGC	240
GTAAGTTTGC CATCATCACA GGACTTAACT TACCGATGTT GATTCAAGCC TACACAGAGC	300
GCCTCATGGA CGCTGCTGCA GGTGTAGAAA AAGTCGCTGC TAATATCATT AAAGAAGCCA	360
AAGATGGCAT CAAAGCTCTT CCAGAAGAGC TAAATCCAGT CGAAGAAGTT GCAAGCGCTG	420
CAGCTGCTCC AGTTGCCCAA ACTGCTATCC CAGAAGGAAC TGTATCGGA GACGGTAAAT	480
TGAAAATCAA TCTTGCCCGT CTTGACACAC GTCTACTTCA CGGTCAGGTT GCAACTGCTT	540
GGACTCCAGA TTCAAAGCA AATCGTATCA TCGTTGCTTC AGATAACGTG GCTAAAGACG	600
ACCTTCGTAA AGAATTGATT AAACAAGCAG CTCCAGGTAA TGTCAAGGCT AACGTGGTTC	660
CAATTCAAAA ACTGATTGAG ATTTCAAAAG ACCCACGTTT TGGAGAAACA CATGCCCTTA	720
TCTTGTTTGA AACACCTCAA GATGCCCTTC GTGCCATCGA AGGCGGCGTG CCAATCAAGA	780
CTCTTAATGT TGGTTCTATG GCTCACTCAA CAGGTAAAC ATTGGTCAAT ACCGTTTTGT	840
CTATGGACAA AGAAGACGTT GCTACATTTG AAAAAATGCG TGACTTGGGT GTTGAATTTG	900
ATGTCCGTAA AGTACCAAAT GATTCTAAAA AAGATTTGTT TGACTTGATT AACAAAGCCA	960
ATGTCAAATA AGCCATTATT TATGAAAGGA TTTTAAACAT GTCTATTATT TCTATGTTTT	1020
TAGTAGTCGT TGTAGCCTTC TTTGCAGGTC TTGAAGGCAT CCTCGACCAG TTCCAATTTT	1080
ACCAACCCTT TGTAGCCTGT ACCCTTATTG GGCTTGTAAC AGGTCACCTG GAAGCAGGGA	1140
TTATCCTCGG TGGATCGCTT CAAATGATTG CCCTTGCTG GTCAAATATC GGTGCTGCTA	1200
TCGCTCCTGA TGCTGCACTT GCTTCTGTCG CTGCTGCCAT TATCATGGTT CTGGTGCTG	1260
ACTTTACCAA GACTGGTATC GGTGTTGCCC AAGCGGTTGC TATCCCTCTT GCTGTAGCTG	1320
GACTTTTCTT GACAATGATT GTTCGTACAA TTTCAGTTGG TTTGGTTCAT ACTGCAGATG	1380
CTGCCGCTAA AAAAGGTGAC TTCGGCGCTG TGGAGCGTGC GCATTTTCATC GCGCTACTTT	1440
TCCAAGGACT TCGTATCGCG CTTCTGTCAG CTCTTCTCCT TATGGTACCA ACTGAACTG	1500
TACAAAGTAT CCTTAGTGCC ATGCCAGACT GGCTCAAAGA TGGTATGGCT ATCGGTGGTG	1560
GTATGGTCGT TGCCGTTGGT TACGCCATGG TTATCAACAT GATGGCAACT CGTGAAGTAT	1620
GGCCATTCTT CGCTCTTGGT TTCGTTCTCG CTGCTGTGTC AGATATTACT CTAATCGGAT	1680
TCGGTGCTAT CGGCGTTGCT ATCGCTCTTA TCTACCTTCA CCTTTCTAAA ACTGGTGGA	1740
ATGGTGGCGG AGGAGCCGCA ACTTCTAAGC ACCCAATCGG CGATATCCTA GAAGACTACT	1800
AAGATAAGAA AGGACTGAAA ACATCATGAC TGAAAACTT CAATTAACTA AATCAGATCG	1860
TAAAAAAGTT TGGTGGCGTT CAACCTTCTT ACAAGGTCTT TGGAACCTTG AACGGATGCA	1920

1208

AAACTTGGGC TGGGCTTATA CACTCATTCC AGCTATCAAA AAACCTCTATA CTAAAAAAGA	1980
AGATCAAATC GCTGCTCTTG AGCGTCACCT TGAGTTCTTC AACACTCATC CATACTAGC	2040
TGCTCCAGTC ATGGGGGTTA CTCTTGCGCT TGAAGAAGAA CGTGCTAACG GTGTGGAAT	2100
CGATGACGCT GCTATCCAAG GGGTTAAAT CGGTATGATG GGACCTCTTG CTGGTATCGG	2160
TGACCCAGTA TTCTGGTTTA CAGTACGCCC AATCCTTGGA TCTCTCGGTG CTTCACTTGC	2220
CCTTACTGGC AATATCTTGG GGCCACTCCT CTCTTTGTT GCATGGAACT TGATTCTGAT	2280
GTCATTCTTG TGGTATGTTT AAGAGATTGG ATACAAGGCT GGATCAGAAA TCACTAAAGA	2340
TATGTCTGGT GGTATCCTTC AAGATATCAC TAAAGGAGCT TCTATCCTTG GGATGTTTAT	2400
TCTTGCTGTC CTTGTTCAAC GCTGGGTAAA TATTAAATTT GCTTTCGATG TTTCTAAAGT	2460
TCAACTAGAT GAAAAGGCTT ATATCCATTG GGATAAATTG CCAGAAGGGT CTAAAGGTAT	2520
CCAAGAAGCA TTCGCACAAG TAGGACAAGG ATGTCTCTCA ACTCCTGAAA AAGTTACTAC	2580
TTTCCAACAA AACTTGGATA TGTGATTCC TGGATTATCA GGACTACTCC TTACTTTACT	2640
TTGCATGTAC TTAATAAGA AAAAAGTATC TCCAATCACT ATTATCCTTG CCTCTTCGC	2700
AGTGGGTATT GTGGCACATG TTCTTCACAT CATGTAATCA AGCAACTAAA AAGGAACCAG	2760
GTTCTAAAAT CTGATTCTTT TTTTCTATGC TTTTATTGAG CCAAGGCTCC CATTGGATCC	2820
CATGGTGCAA GTACGATTGG TTCTGCTCCA TAGGCAGCTT GTTCTTCTGC TGTCAGCAAT	2880
TCCTTACGAA CAACGATTTG GTATGTGTAT TCGTCCATCC AAGCGTCTGA GGCAACAAAG	2940
TAACCATCTG TACCGACCTT GTCTCCCAT GAGTTTCAAA CCTTCCACTT GGTGATTATA	3000
CCATTTTCGT CCAAGTCAAC ACCTGTCAAG ACCATGGCGT GGGTCATCAA GCTTTCATA	3060
TAGTCCAAAC GTCCAGCCTT GTCTTGAGTA AGTTTAATGT CCATGCTTGA TTCAAAGTCA	3120
TAAACATCTG TCGCAAGGAT GCCAGCTTAC GGTGCTGAG CTGGCCGACA TCAGAACCAA	3180
ACCAAACAGT CTCACCTGCT TGCATTTGGG CAATCGCCAA TTCTTTCAAG CGCTCCATTG	3240
GAACGTTGAT GTAGCGAACT GCACGGCTAC CAACCAATT CCCCACATC TCAACTGTGT	3300
AAGATTTTCC GTAAGGTTTA TCAGCAGTTG GAGCATTGAT AACAGAAACG TAGTCTTCTA	3360
AAGGAAGATT GACATATTTT TTGTAAAAT CTGTGGTGT GATTCTTTT TCACTTTTGT	3420
AGTTGTATC TTTATCGCGA TAAGCAAAGT CAAACTTGCG TGGTGGAAGT CCTAATGACA	3480
TAGCAAGAAA GTTAAAGATT TCTTGCAAGA GGTCTTCTTT CTTAGCTTGA ACAGTCGCTT	3540
GATCTGCACC AGAAACAAGC AAGTCACGCA AGATTGAGC ATCTTGACGA AGCAATTTAT	3600
TAAGGATCGC ATTTAGCTCA CGACTGCTGC TAGATGAAAC AGACTCAGGA TAACTGACT	3660
TAGGCACGAC ACCGTATTTT TCAAAGAGGG AAACGACCAT ATCCCATTGA CCGCATCTT	3720

1209

GTTGAGGTGT TTGGAGTAAG AAGCTAACTT GCGGCTAGTC AATTCTTGGT CTGAAGTCGC	3780
AATGACTTGC TCCAAGAACC AGTTTGATTT CTCATACTTA TCCCAGAAGA AAGTGTTGGC	3840
TTGTGACAAC TCAAAGTTCT CCAATTTGTA TTGCGAGATG AGTTTGTGGC GGAAGGTGTT	3900
GAGAGCCGCA AACATCCAGC AACGACCAGA CGCTTCTGG TTAGTGACCT TGTCTTGGT	3960
TAAATCCAAT GAGAAAACAG GTGTGTTGTC TACATGGCTT TGGCGACGTT CCAGAGCTGC	4020
AAAAATTCCG TTGTGGCTGG CAGCATTTTC AATCGCTTGG TATTTTACAT TTGCTTCATA	4080
GTTGGCAAAT AGTTTATCAG TAAATGATTC TTGAATCGCG TTCATAGATT CCTCCTTTTA	4140
GTCTACAGTG TATTGG	4156

(2) INFORMATION FOR SEQ ID NO: 212:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3902 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 212:

AAAAACAACA AAATAAAACA AAAACAAAAA TATCGAGGTT TATTTTCAAA ACTTTCGATA	-60
TTTTTATTAA GTTATTATTT TGTGTTTCT AGTTTACTTT TTGATGGTTA AGAGTGGTGG	120
AGAATTATAC TCAATGAAAA TCAAAGAGCA AACTAGGAAG CTAGCCGCAG GCTGTACTTG	180
AGTACGGCAA GGCGAAGCTG ACGTGGTTTG AATTTGATTT TCGAAGAGTA TTAGTGCAAA	240
CCGTAGTTGT AGTCATCATC TTGCATGGCT TCAACTTCGC CAAGAAGGTA ACCATTTCCG	300
ACTTGAGAGA AGAAGTCATG GTTGGAAGTT CCTGTTGAAA TACCGTTCAT AACGATTGGG	360
TTGACATCTT CAGCTGAATC TGGGAAAAGT GGATCTTGTC CCATGTTTAT GAGAGCTTTA	420
TTGGCATTTG AGCGAAGGAA GGTTTTAACC TCTTCAGTCC AACCAACACC GTCATAAAGA	480
CTCTCTGTGT AGCCTTCTTC ATTTTCATAA AGAGTATAGA GTAGGTCGTA CATCCATTCT	540
TTGAGTTTTT CTGCTCTTC TTCAGGTAAT TCATTGAAAC CAAGTTGGAA TTTGTAACCA	600
ATGTAGGTTC CGTGAACAGA CTCGTCACGA ATAATCAATT TAATGATTTT TGCAACGTTG	660
GCAAGTTTGT TGTACCGAG ATAGTAGAGG GGAGTGAAGA AACCAGAGTA GAAGAGGAAG	720
GTTTCGAGGA AGACGCTGGC AACTTTCTTT TCAAGTGGGC TGCCGTTTAG GTAGATTTTCG	780
TTGACAATCT CAGCCTTCTT TTGTAGGTAA GGATTGGTAT TGGTCCATTC GAAAATTCT	840
TCAATCTCAG CCTTAGTATT CAAGGTAGAA AAGATTGATG AGTAAGATTT AGCGTGGACA	900

1210

GATTCCATAA	ATTGGATGTT	ATTGAAGACA	GCTTCCTCAT	GTGGTGTACG	GATGTCTGCG	960
CGAAGGGCTT	GAACCCAGT	TTCAGATTGC	ATAGTGTCAA	GAAGGGTTAA	ACCACCAAAA	1020
ACTTTTCCGA	CCAAGTCTTT	CTCTTTGTTA	GATAGCTTTC	TCCAGTCATC	CAAGTCGTTT	1080
GATAAGGGAA	TACGTGTATC	GAGCCAAAAT	TGCTCCGTCA	GTTTTTCCCA	AGTTGATTTG	1140
TCGATGACAT	CTTCGATGGC	ATTCCAGTTA	ATGGCTTTGT	AGTAAGTTTC	CATTTAAAAT	1200
CTCTTTCTGT	GTTTAGTATT	GCGAACTCAC	AATTATTTCT	ACTTTACCAT	AATTCTATAG	1260
GAGTATCGCA	CAAAAAGTCG	GAAGCCCGAC	TTTTAAATG	TTACATAAAT	TATGTTATGA	1320
CATAGTAGAT	TTGATTTTAT	CAGTGCTGCT	TAGGGAAAAA	TAGTGTTCCT	ATGCTAGAAA	1380
CTAAATCACA	CAGCTTTCAC	ATTGGTTGGC	GCCGACTTCT	CCACCGTCAT	CTGTAAAGGT	1440
ACGGACGTAG	TAGATAGACT	TGATTCCCTT	GTAAAGGCA	TAGTTACGAA	GGATGGACAA	1500
GTCACGTGTC	GTTTGTTTAT	TTTCCCTCTT	CCATTTCGTA	AGGCCTTTTG	GAATGTCACT	1560
GCGCATGAAG	AGGGTGAGTG	AAAGTCCTTG	ATCCACGTGT	TCAGTCGCAG	CAGCGTAAAC	1620
ATCGATGACT	TTACGCATAT	CCATATCGTA	GGCAGAAGTG	TAGTAAGGAA	TGGTTTCTGT	1680
AGACAAGCCA	GCAGCAGGGT	AATAGATTTT	ACCAATTTTC	TTCTCTTGGC	GTTCTTCGAT	1740
ACGTTGCGTA	ATCGGGTGGA	TAGAAGCAGA	AACGTCGTTG	ATATAGCTGA	TAGAACCATT	1800
TGGCGCTACA	GCAAGGCGAT	TTTGGTGGTA	AAGACCATCT	TCTTGAACCT	TGTCGCGAAG	1860
TTCAGCCCAA	TCAGCAACAC	CAGGGATAAA	GACATTTTTC	AAGAGTTCTT	TAACACGGTC	1920
TGATGTTGGA	ACAAATTCAC	CAGTTACATA	CTTGTCAAAG	TAACCTCCGT	TAGCATAGTC	1980
TGATTTTTC	AAGTTGTGGA	AGGTAATACC	ACGTTACGCT	GCAATATTGT	TTGACTCTAC	2040
CAAGGTCCAG	TAGTTCATAA	GCATAAAGTA	GATGCTTGTA	AATTCAACAG	ACTCAGGTGA	2100
ACCATATTCA	ATGAGTTGTT	GGGCAAGGTA	GCTGTGCAGT	CCCATGGCAC	CGAGACCAAA	2160
GGTGTGGGCT	TGGCTATTTT	CATGGTCAAT	CGTTGGTACA	GCTACGATAT	GTGAACTATC	2220
TGTAACGAAA	GTAAGGGCAC	GAACCATAGC	ACGGATAGAA	CGACCAAAAT	CAGGTGAAAGT	2280
CATCATGTTA	ACCACGTTGG	TTGAACCCAG	GTTACATGAA	ACATCTGTTC	CCATTTGAAG	2340
GAATTCTTGA	GCATCGTTGA	TCAAGCTTGG	TTCTTGAAC	TGAAGAATCT	CAGAACACAA	2400
GTTACTCATG	ATAATCTTTC	CATCAACAGG	ATTTGCACGG	TTAGCCGTAT	CGATGTTGAC	2460
TACATAAGGA	TAGCCAGACT	CTTGTTGCAA	TTTAGAGATT	TCAGTTTCCA	AATCCCGCGC	2520
CTTGATTTTT	GTCTTGCGAA	TATTTGGATT	TGCGACCAAT	TCATCGTATT	TTTCAGTAAT	2580
GTCGATGTAA	TTGAATGGCA	CACCGTATTC	TTTTTCTACA	GAGTAAGGGC	TGAAGAGGTA	2640
CATTTCTTCA	TTTTTACGAG	CCAATTCGTA	GAATTTATCA	GGTACTACAA	CACCAAGTGA	2700

1211

TAGAGTCTTG ACACGTACTT TTTCATCAGC GTTTTCTTTC TTAGTTGAAA GGAAAGCGAT	2760
GATATCTGGG TGAAAGACGT TGAGGTAGAC AACACCAGCA CCTTGACGTT GCCCCAATTG	2820
GTTGGAGTAA GAGAAGCTGT CTTCAAAAAG CTCATAACA GGAACGACAC CTGAAGCAGC	2880
TCCTTCATAG CCTTTGATAG GTGCACCAGC TTCACGAAGG TTGCTGAGGG TAATTTCCAC	2940
ACCACCACCA ATACGTGAAA GTTGAAGAGC TGAGTTGATA GAACGCCCGA TAGAGTTCAT	3000
ATCATCCGTC ACTTGATTA GGAAACAAGA TACCAACTCC CCACGACGAG CACGTCCAGC	3060
ATTCAAGAAG GAAGGAGTAG CAGGTTGGTA GCGTTGGTGG ATGATTTCAT TGGCAATATC	3120
GATTGCAACA GCTTCATTCC CATCAGCGAA ATAAAGGCA TTGAAGAAGA CACGGTCTTC	3180
CATATTTTCA AGATAGTATT CACCGTCATT AGTCTTTAAG GCATATTGAT TGTAAAATTT	3240
ATAAGCTGCC ATGAATGACT TGAATTGGAA GTTTTGGTCT TTGATAAATT GAGCTAATTC	3300
TTCCAAGAAC TCTGGACGGT ATTTCTTGAT AAAGGCTGTT TCGATGTAGT TGTGTTCAAT	3360
GAGGTAATTG ATTTTGTCTT TGATTGAATC AAAAACCATA GTGTTTGGAA CTACATTTTC	3420
TTTAAAGAAA GCATCCAAGG CTCCTTGTC TTTATGAAGC ATGATTTGTC CATTAACAGG	3480
ACGGTTAATT TCGTTATTAA GACGGAAGTA AGTCACGTCT TCAAGATGTT TTAATCCCAT	3540
AAAATTTCCC TTATCTAATT ACAAAGAAA GGCTTCTAAG TTAGCCCTAA AAGCAGTTTC	3600
TTCTGGATGA TGTACTAAGA TTATGCTAAT TGTTCAGTT TTCCTGGTTG GAAACCTGAA	3660
AAGACTTCAG TTGGTGTGTTG GATAACAGGA GCTGCGCTAA AACCAGAGCTC TTTAACTTGA	3720
TCGACGTACT CAGGTTGCTC ATCAAGATTG ATTTACGAT AAGAGACATT ATTACTGTCC	3780
AAGAAACGCT TGGTCATTTT ACATTGGACA CAATTGTTTT TAGAATAAAC GGTACCATT	3840
GTGTAACCTC TCTTCAAAAT TTAATACTAT CTTAGTATAT CAGAAAATAA AATTTTGTGC	3900
GG	3902

(2) INFORMATION FOR SEQ ID NO: 213:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2456 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 213:

TATTGAAGCT ATTGTAGACT ACAAAGATAA GGATTTGCAG TTAGTAGGCG GTGAGACTCA	60
CTGATAACCT AAAAAGGATA GTCAATTATG CTTGTTTACT AACTATTAAC TATGCTAAAT	120

1212

CAATTGAGGT TGTTCACATA AACTCTATA TCAGAGAAGC CTGATATAGA GTTTTCTTT	180
GCTAGTTTGA GGATTTTTTT GTAAAATAGA AAAAGTGAAG AGAGGTATGA AATGAGCAAG	240
AAAGATAAAA AAATCGAAAT TCAAGTAGCG GATGCCAAAG TTAATGTTGG TAAAGACAGT	300
TTTGAAGGTT ATACATTGAC TATCGGTAAA AAAGTTATCG GAGAAATTGC CGAATTAGAC	360
GGACAATTTG CCATTATAAA GAATGGGAAT GTCGATAGTT TTTATAAAAA ATTGGAAAAA	420
GCTGTGGAAA TTTTGATTGA AAATTATAAT TTAGCAAAAT AAGTCTTGTT TTTTGAAT	480
TTTCATGATA TAATAGTCCA TGTGATTGT AGGAGAGATA GCGAAGAGGC TAAACGCGGC	540
GGACTGTAAA TCCGCCCCCT CGGGTTCGGG GGTTCGAATC CCTCTCTCTC CATTTCATTA	600
ATGGGGTATA GCCAAGCGGT AAGGCAAGGG ACTTTGACTC CCTCATGCGT TGGTTCGAAT	660
CCAGCTACCC CAGTTCTTAG GTAATAATCA AGATAGAAAAG CAAAATATCT TAGGGTATTT	720
TATTTTATA ATTGAAAGAC GTGAATGATA TGAACATGTC CTGCGGGTG CTTAGGAAAA	780
AAATTATAAG TATGTCAAGT TTAAGAAAAA CTGATTGTT GGAGGATTTT TTAGATGAAC	840
GAATTGAAG ATTTGCTAAA TAGCGTTAGT CAAGTTGAGA CTGGTGATGT TGTTAGTGCT	900
GAAGTATTGA CAGTTGATGC GACTCAAGCT AACGTTGCAA TCTCTGGAAC TGGTGTGAA	960
GGTGCTTGA CTCTCGCGA ATTGACAAAC GATCGTGATG CAGATATCAA TGACTTTGTT	1020
AAAGTAGGAG AAGTATTGGA TGTCTTGTA CTTCGTAAG TAGTTGGTAA AGATACTGAT	1080
ACAGTTACAT ACCTTGATC TAAAAACGC CTGAAGCTC GCAAAGCATG GGACAACTT	1140
GTTGGTCGCG AAGAAGAAGT TGTACTGTT AAAGAACGC GTGCCGTAA AGGTGCACTT	1200
TCAGTAGAAT TTGAAGGTGT TCGTGGATTT ATCCAGCTT CAATGTTGGA TACTCGTTTC	1260
GTACGTAACG CTGAGCGTTT TGAGGTCAA GAATTGATA CTAAATCAA AGAAGTTAAC	1320
GCTAAAGAAA ACCGCTTCAT CCTTTCACGT CGTGAAGTTG TTGAAGCAGC TACTGCAGCA	1380
GCTCGCGCTG AAGTATTCGG TAAATTGGCT GTTGGTGATG TTGTAAGTGG TAAAGTTGCT	1440
CGTATCACAA GCTTCGGCGC TTTCGTCGAC CTGGTGGTG TTGACGGATT GGTTCACTTG	1500
ACTGAATTGT CACATGAACG TAATGTATCA CCAAATCAG TTGTAAGTGT TGGTGAAGAA	1560
ATTGAAGTGA AAATCCTTGA TCTTAACGAA GAAGAAGGAC GTGTATCACT TTCACTTAAA	1620
GCAACAGTAC CAGGACCATG GGATGGCGTT GAGCAAAAAT TGGCTAAAGG TGATGTAGTA	1680
GAAGGAACAG TTAAACGTTT GACTGACTTC GGTGCATTTG TTGAAGTATT GCCAGGTATC	1740
GATGGACTTG TTCACGTATC ACAAATTTCA CACAAACGGA TTGAAATCC AAAAGAAGCT	1800
CTTAAAGTTG GTCAAGAAGT TCAAGTTAAA GTTCTTGAAG TTAACGCAGA TGCAGAACGC	1860
GTGTCACTTT CTATTAAAGC TCTTGAAGAA CGTCCAGCCC AAGAAGAAGG AAAAAAGAA	1920

1213

GAAAAACGTG CTGCTCGTCC ACGTCGTCCA AGACGTCAAG AAAAGCGTGA TTTCGAACTT	1980
CCAGAAACAC AAACAGGATT TTCAATGGCT GATTTGTTTG GTGATATCGA ACTTTAATCA	2040
AATTGAAAAT TCACAAAATC CTTTGTTTAC TAAACAAGGG ATTTTCTCTGG CTCTTTGTCA	2100
ACTGTAGTGG GTTGAAGAAA AGCTAAGCTC GAGAAAGGAC AAATTTTGTC CTTTCTTTTT	2160
TGATATTCAG AGCGATAAAA ATCCGTTTTT TGAAGTTTTC AAAGTCCGA AAACCAAAGG	2220
CATTGCGCTT GATAAGTTTG ATGAGATTAT TGGTCGCTTC CAGTTTGGCG TTAGAATAGT	2280
GTAGTTGAAG GGTGTTGACA AGCTTTTCTT TATCTTTGAG GAAGGTTTGA AAGACAGTCT	2340
GAAAAATAGG ATGAACCTGC TTAAGATTGT CCTCAATAAG TCCGAAAAAT TTCTCCGGTT	2400
CCTTATTCTG AAAGTGAAAC AGCAAGAGTT GATAGAGCTG ATAGTGGTGT TTCAGG	2456

(2) INFORMATION FOR SEQ ID NO: 214:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 10974 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 214:

AAATAGGATA TAGAGACATC CTTCTGATCT GCTTTWACA AAGTCCAATT ATATGCGGAT	60
CTATACCTCC ACAATGTCCA TTATTATmCC TAACTATAAT ATGAGCCGAA AACACTATAT	120
CCTTAATGTC TCCATATCCA TCAGGGATAT TAATATTTAT TTTTCCACAA CTATATTGCA	180
TTGTAACCAT CTCCTTAAAC GACGCATTAT GATATTTGAT AGAGAAATTT TTATGAATAA	240
CTCAATAATT TTATAGTAAA TCATGCTTAT ATCTCAAAGA TACCTATTTT ATCTTGCTCTC	300
GACCTTCTCC AAAGAATTGC TATAATACTA TTACAAATCC ATCTGCACTA CACTTCAAAT	360
TTTAGCACTG TATAAAAACG TTTCAATACA CTAACITCAA GAAACTTCC ACTATTAATT	420
GAAAAAATTG ATAGAGATAA ATTAAAAATC TATATTGAAA CTCATCCCGA TGCTTATTTG	480
ACTGAAATAG CTGCTGAATT CAACTGTCCT CCAACAACTA TTCATTACGC TCTAAAGGCT	540
ATGGGATATA GTCTAAAAAA GAGCCGTACC TACTGCGAAC AAGACCCAGA AAAAGTAAAT	600
CGGTTCTCTA AAGAATTGAA TCACTTAAGC TACCTGACTC CTATTTATAT TTATGAGACA	660
GGGGTTGAGA CCTATTTTGA TCTCGAATAT GATCGAGCCT TGAGCAGGCA GTTAGTCTCT	720
CTGGAAGAAG ATATAATTAT TTGAATTAAG ATCGAGACAA CGCACACCAG AGATTGCGAT	780
ACTGTTATAG AAGTACTAAT GCCCTTTTTT GTTCAATAT ACTATGGCTC CGATGACCTA	840

1214

TAAAGATACG ATGACGAGTG ACTTTTTCGA AGCTTGCTTC CAAAAATTCT TACTACCTAC	900
TTTAGATACA CCATCCCTTA TCATTATGGA CAATGCAAGG TTTCACAGAA TGAACATGTG	960
TAAGGAGCAG GGCATAGACT GTTACCACTT CCTACCTATT CACCCGAGTA TAATCCCATT	1020
GAGAAATAT GGGCTTACAT CAAAAACATC TCAGAATAAT ATTGTCAAAT TACGATGCTT	1080
TTCTTGAGGC ACTTTTGTCC TATTCTTGTT TCAGCCGACT ATACTCCGTT ATTGGGCAGC	1140
TACGGAACAG TCGATGGGAC GATGGGGGGA CATAAAAAA TCCTCCAGTT TTGTTTTTTA	1200
TAACAGTATA CTGGAGAATT GACAATCTCG GTAGATACCT CGTTATAGCG CGGTACTTAA	1260
TTAGGCAGTT ACAAACAAC TGTGAACAGA AAACATTCCA GAGTCAGACA AGACTTTGGA	1320
ATGTTTTGGC TCTATAATTT CTGTAGTGGG TAATCCCACC CCAGGAATTA TAGGGTCGTT	1380
TCTTGTAGAA AAAAAGCCCC ATATGACCTA TAATGAAAAG CGTCTAACCA ACTCATTAGA	1440
AAGGGTTCAT ATGGAACAAC TTAAGAATAC CACAGATTTG CTCGGATTGG AAGACAAAAA	1500
TATCAAAATC TTGTCTGTTC TGAAATACCA AACCCATCTA GTCGTTGAGG CAAAGTTGGA	1560
TTCCCCGCT CCTCCTGTGC CTCATTGTCA AGGGAAGATG ATCAAATACG ACTTCCAGAA	1620
AGCCTCTAAA ATTCCGCTTC TCGACTGTCA GGGTTTACCC ACGGTAAGTC ATCTCAAAAA	1680
GCGCCGCTTT CAGTGCAAGA ATTGCCCTAA GGTGGTCGTT TCTCAAACAT CCATTGTCAA	1740
GAAAAATTGC CAGATTTCCA ACATGGTGAG ACAAAAAATC GCTCAGCTCC TCCTTGAAAA	1800
GCAGTCTATG ACTGAGATTG CCCACAGATT GGCGGTCTCA ACTTCCACCG TCATCCGAAA	1860
ACTGAGGGAA TTAAAGTTTG AAACCGATTG GACCAAGTTG CCAAAGTTA TGAGTTGGGA	1920
TGAGTATAGC TTCAAAAAGA GCAAAATGAG CTTCAATTGCC CAAGATTTTG AGTCCAAATC	1980
CATCCTCGCA ATTTTAGACG GGCGAACTCA TCGGTGATT CGAAACCATT TCCAACGCTA	2040
TCAGAGAGAG GTTCGGGAGC TGGTCGAGGT CATCACCATG GACATGTACA GCCCTTATTA	2100
TCGGCTCGCT AAGCAACTCT TTCCAAAGGC GAAGATTGTT CTTGACCGCT TCCACATTGT	2160
CCAACATCTG AGCCGAGCTA TGAACCGAGT ACGAATCCAA ATCATGAACC AATTTGACCG	2220
AAAATCCTTG GAGTATCGGG CGCTCAAGCG CTTTTGGAAC CCTCGCTTTT TCGTTTCTAG	2280
GCTCGGGCTA AATCAGTCCA CTGGACTGAT TTAATACACC AGTATAGCTT CAAGCTCTGT	2340
CAGAAACGAT TCTATCAGCC CACGTTTCGA ATGCACTTAA CCCATCGGGA AGTACGAGAT	2400
AAGCTGCTTT CTTACTCTGA GGGATTACAG GTTCACTACG AACTCTATCA ACTCCTGCTC	2460
TTTCATTTTC AAGAGAAGAA TGCCGACCAT TTCTTTGGAT TGATTGAGCA AGAACTGCCA	2520
ACGGTTCATC CGCTTTTCA AACGGTCTTT TGGACTTTTT TAAGGGATAG AGATAAGATT	2580
ATCAACGCAC TTAAGCTGCC TTATTCCAAC GCTAACTTG AAGCGACCAA TAATTTGATT	2640

1215

AAGATTATCA AGCGCAAAGC CTTTGGTTTC CGGAACTTTA ACAATTTTAA AAAACGGATT	2700
TTGATGACTT TGAACATCAA AAAAGAGAGT ACGAATTTTCG TACTCTCCAG ATTGCAGCTT	2760
TTCGCCTACC CACTACACTT GACAAAGAGC CACTCTTTAT TCCATGGTAT CAAAGGCAAG	2820
ACTTGGTTTG GCATTGAGGT CCCAGCCTGC GAAGTTTCTT TTGTTCCACT CGCTGACGCT	2880
GGCATAGGCA ATCATACCTG CATTGTCTCC GCAGAGTCGC AGAGGGGGGA TGATAACCTT	2940
GACATCTGTG ATTTCCGGCTG CTAGGCGTTC TCTGAGACCT TTATTGGCTG CCACACCACC	3000
TGCCACAACCT AGGATTTTAA CAGGATATTT CTCCAAAGCC TTCTTGGTTT TTGCCATGAG	3060
AATGTCCATA ACTGCTGCTT GGAAGGAAGC ACACAAATCT TCTGTAGACA GGCTTTCTCC	3120
CTTTTGCTCG GCATTGTGAT GAAGATTGAT AAAGGCAGAT TTCAAACCTG AGAAGGAGAA	3180
CTCCAGATTA TCTTCCTTAA TCATGGCAGC GGGGAAATCA TAAATATCCT GCCCTGATG	3240
AGCCAGCTCG TCAATCTCAC GACCTGCAGG ATAGGTCAAG CCCATGACAC GGCCGACCTT	3300
ATCATAAGCC TCACCAACCG CATCATCACG GGTTCCTCCA ACAATCTTAT AATCTCCTGC	3360
CTCCGAAACA TAAACCAACT CTGTGTGTCC GCCGCTGACC AAGAGGGCTA GCAAGGGAAA	3420
CTCCAAAGGC TCCACACTCT GAGCTGCCAT GAGGTGCCCA GCCATGTGAT TAACAGGAAT	3480
CAGTGGAAGT CCGTGAGCCC AAGCAAAGGC CTTGGCAGCT GACAAACCAA CTAGCAAGGC	3540
TCCGACCAAG CCTGGTCCGT AGGTAACCGC AACAGCTGTC ACGTCCTCTT CGGTAATCCC	3600
TGCTTCTGCC AATGCCTCCT CGATACAGGC TGTAATGACC TCGACATGGT GACGACTGGC	3660
TACTTCGGGC ACTACGCCAC CAAAACGTTT GTGACTCTCA ATTTGACTAG CAATGACATT	3720
GGACAAGAGC TCATCGTCGT TTTTCAAGAC GCGGACACTG GTCTCATCAC AGGATGTCTC	3780
AAATGCTAAA ATATATCTAT CCTTCATCTA TTTCTCTCTT CATGATAATG GCGTCCTCGA	3840
CTGGGTCATG GTAGTAGGCC TTTCGCTCAG CGATAACTGT CATCTTTTCT TTCTTGTAAG	3900
ATGCTTGCGC TCGTTGATTT GACTGTCTGA CTTTCGAGGAA AATTTCTCTG TCTGTCGGCA	3960
ATTGAGCAAA CAAGGCTGAC GCAATCCCCT GACCCTGATA AGCTCCTTTG ACAGCGATTT	4020
GCAGGACTTC TGCTTCAAAA AGATTCTCCT GCACAGCTAG AAATCCAATC ACTTCTGCCC	4080
CATCATAAGC CAATGCATAC CAAGTCTGGT CTTGGGACAG ATCTGCTTGG ATTTGCTCCA	4140
GAGTCCAAGG ACTGACTAGG TAAACAGCTG CCATAACAGC GTAGATGGCT TGAGCTAGGT	4200
CAGGCTGTTG TTGAATTCGC TTGATTTCTA TCATAGGCGT TTAATGTAAG ACTCGCCAGA	4260
CTCGGTATGG TTCTTGAGCC AGTTTTCCTC AGCCTCGACT CGTTTGAGGT AATTCGGCAC	4320
AAAATCATGC AAGGAGTCTG CTTCCCTGTC CCAGGCCAAA AGAGCTAGAT TAGCTGCATT	4380

1216

GGGCAATGTT TCTTTGTAAT CAGTCCTTGG CAAGTGTTTT TGAATCTGCT CAACAAAGGG	4440
GCCAACTTCT CCGACAAAGG TTACCTGACT AGTACCCTTG ACTTTTTCTA GCACCTCTTC	4500
AAAAGATAGG TGCCTTCTG CCATGACAGG TTTGGCATT TCAATAAATC CTGCATAAAC	4560
ATTATTGCGA CGCGCATCCA TCAAGGGGAC AAACAAACCT TCTTGTGAT GGGGCACCAG	4620
AGCCAAGAGA CTCGACATAC CAACCAACTC GATGTTGAGG GTGTGAGCTA AGGTCTTAGC	4680
AGTTGCTACC GCAATTCGCA AGCCTGTATA GCTACCCGGC CCTTCAGCTA CCACGATTCTG	4740
GTCCAAATCC TTGGGTGTCC AATCCAAACT TGCCATCAAA AAATCGATGG CAGGCATAAG	4800
AGTAATACTG TGATTTTTCT TAATATTAAT CGTCGTCTCG GCAAGAACCT GCTTATCCTC	4860
TAAATAGCC AGAGAAAGAG CCTTGCTGGA CGTATCAAAA GCTAATACTT TCATAACACA	4920
TTCTATCTT TTTGTCTGCT TACTATTATA CTACAAAAGC TGGCACATGG GAATTTCTT	4980
TGCCCCCAGA CAAGAGTGCC CTCACCTAAC TAAAAATAAT TAAAAAAAT GCTCACTTTT	5040
CCTTTCTTT TCCGAATATA AAAGTGAACA AGAAAAAGG AGGAAAGTTC AATGACAAAT	5100
TTTGACATTC TTGACAATCA ATTTTATCC TTATCTGAAA ATGAATTATC AGATATTGAT	5160
GGCGGTCTCG CTCCTTGGT TATCTTTGGA GTAGCAGTAT CTTGGAAGGC TATTGCAGGT	5220
GGAACAGCAC TTATAGGTTT TGGTTGGCA GCTGGTTATT TTTTAGGAGG AGATTAATAT	5280
GATGAAAGAT TTGAACAATT ATCGTGAAAT TTCTAATAAG GAATGCAAG AAATCAAGGG	5340
TGGCTTTGGT GTCGGTGTG GTATCGCTTT ATTTATGGCA GGTATACCA TTGGAAAAGA	5400
CCTTCGTAAA AAGTTTGGTA AGTCATGCTA GATAAGAAAC ACATTTTATAG AAGGATAAAT	5460
TTTATTGTCT TCATCTCTTA CAGTTTGCTC AGCATCTCA ATGATTTGAA CATTAATACC	5520
ATCCCTTTAC CATTCGATTT ATCTGTTTGT ATGTGTTTAT TTTTATGCTT CAACTCTATT	5580
TTTGATCAGA ACAATGACTC CCATAAAAAT AATAAGCTTT GAAAATTCCA TTGTCATGTC	5640
ATGTTAGAAA AATGCAAAGA CCACCTCATC TTGATAGATG GGGTGAATT TTCGTGTCGT	5700
AAATCTACTA TCTCTACATT CCCAAACAAA AAACCCAGC ATAAGCAGGG CATCTAAGCA	5760
TTTAATTCAA AGTAAATAC AAACCAACG ACATAGGTCA CGAGGAGGAG AAAAAGCGAG	5820
TAGAGAGTCA CAAAGGTCAT TTTCCACAAG AACTTGGTTT GTCGTCGTT CAGTTTGGCA	5880
AATAGAAGAT TCCCCGCATA AACGCAAGCA ACAAACAA TAAAGCTAC CAAGCGAGCT	5940
CCGATAGCAA AAGCAAATAA GTTATACATA GGGCAACCTC CTTGACTTAA AATCTATATG	6000
GAATTATGAC AAGCAATAAA TTTCACTTCC GTTATCAACA TAATACATTT TCTTTATTTT	6060
TGAAAACGCT TACCAAAGAA ATCGTCCCT AACTTTCTCG TTTCCGTCTT TTACTAATTT	6120
TTCATTTTGT GGTATAATTG AAATAATTGT AACGAATCAA GGTCAATCTA GACACAAAAT	6180

1217

GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	6240
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	6300
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	6360
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	6420
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	6480
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	6540
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	6600
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	6660
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	6720
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	6780
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	6840
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	6900
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	6960
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7020
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7080
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7140
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7200
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7260
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7320
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7380
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7440
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7500
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7560
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7620
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7680
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7740
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7800
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7860
GGAATGAAAT CAAGCAAATA TCTGCTAAAA GTTTGGAATA AGCTGACCTG TAAATAGAAA	7920

1218

ATGATTCTAT CTGGTCCAGA CATCCTCAGC CGAGGCTTTG TCTACATGAG AGAGTCTGGC	7980
GACTTGATTC GCCAAAGCCA GCGTATCCTC TTCAATGCCA TTCGTATCGC ACTGAAAAAT	8040
AAGGATGCTA GCGTGCAATC TGTCAATGGT GCCATTGTCA ACGCTATTTCG CCCCTTCTCTC	8100
TATGAAAATA CCGAACGTGA ACCGATCATC ATCCCGATGA TCCTCACACC AGATGAAGAA	8160
TAAAGCAAGA AAACAGCCCC GTCCTCGGAG CTGTTTTTCT CTATGCTTTC TTTTGAGATT	8220
AAACTCATA CTCAATGAAA ATCAAAGAGC AAACTAGGAA GCTAGCCGTA GGTGCTCAA	8280
AGCACTGCTT TGAGGTGTA GATAGAACTG ACGAAGTCAG TAGCCATACC TACGGCAAGG	8340
CGACGTTGAC GCGGTTTGAA GAGATTTTCG AAGAGTATCA ATAAAAATCG AAATCAGACT	8400
AGAAGGCTAA GCGAAAGCAT AACTTGAGTT AGCTCCCATG GTTCGGGAAA CTATGGGAGG	8460
CTGGAGATGA ATCAAAGCCA AGCTTTGAAC TCATTTCGTAA GAAGCCGACG ACGTATCATT	8520
TTGATTTTTG AAGAGTTTAA GAAATACTAC GATTTTTACC TTCCAGATAC ACCATCAAAA	8580
TAGAAATATC TGCTGGGTTT ACTCCCGAAA TACGGCTGGC TTGGCCGATG GTTCTTGAT	8640
TGATGAGTTT GAACTTCTGA CGGGCTTCGG TTGCGATAGA ATCAATGTCA TCCCAGTCGA	8700
TATTGGCCGG AATGCGTTTT TCTTCCATGC GTTTCATCTT GGCAACCTGG TCCATGGCTT	8760
TGGAAATATA GCCTTCATAC TTGATTCTCG TTTCAATCAA TTCGATAATC TTGTATCCA	8820
AGTCTTCTGC AGCTGGTCCG ATGAAGGCCA CCACATCTTG GTAAGAACT TCTGGACGGC	8880
GAAGGAATTC CTTGGCTGTC ACTGCATCGG TCAAGGGTTT GAAGCCCATC TCCTCAACCT	8940
TGGCATTGGT TTCCTTGACT GGCTTGAGTT TGATACTGTC TAGGCGCTTC ATCTCATTAT	9000
CAAATTGATT TTTCTTGATT TCAAAACGAG CCCAGCGTTC ATCGTCCACA AGGCCAATCT	9060
CGCGTCCCAT CTCAGTCAAG CGCATATCAG CATGTGCATG ACGAAGAATG AGACGGTATT	9120
CAGCACGACT GGTCAAGAGA CGGTAGGGTT CAATGGTTCC CTTGGTCACC AAGTCGTCGA	9180
TCATCACCCC GATATAACCA TCACTGCGCT TCAAAATCAA TTCAGGCTTG CCTTGATTT	9240
TCAGAGCCGC ATTGATACCC GCGATAATCC CTTGGCCTGC TGCCTCTTCG TAACCTGATG	9300
TTCCATTTGT CTGACCAGCA GTGAAGAGAC CTGAGATTTT CTTGGTTTCC AAAGTCGCAC	9360
GCAACTGATG AGGCAAGACC ATATCATACT CAATAGCATA ACCTGTCCGC ATCATCTCTG	9420
CATTTTCCAA ACCTTTGATG GAATGCACCA AGTCACGCTG GACATCCTCA GGCAGACTGG	9480
TTGAAAGTCC TTGCACATAG ACTTCCTCAG TATTGCGCCC TTCTGGCTCA AGGAAGAGTT	9540
GGTGACGTTT CTTGTCCGCA AAGCGCACA TCTTGCTCTC AATCGACGGA CAGTAACGAG	9600
GCCCCACTCC CTTGACCACA CCTGTAAACA TAGGCGCACG GTGGAGGTTG TTTTGATAA	9660
TCTCATGACT GGTACCATTG GTATAGGTCA ACCAGCATGG TACTTGGTCC TTGACATAAT	9720

1219

CCTCATCAGC TGAAGTGTAT GAGAAATGAT TAGGCACTTC GTCTCCTGGC TGAATTTCTG	9780
TCACATCGTA ATTGATAGAA GAAGCCTTGA CACGTGGAGG GGTTCCTGTC TTGAAACGAC	9840
CGATTTTCGAG ACCCAGTTCC TTGAGATTGT CAGCTAGGTT AATAGAAGCC AAGCTGTGGT	9900
TAGGACCTGA TGAGTACTTG AGGTCTCCGA TGATAATTTT CCCACGGAGA GCAGTCCCTG	9960
TCGTACAAAT AACAGCCTTA GCAGCATATT CTTGATGGGT GGCTGTACGC ACACCGACAA	10020
CCTTGCCATC TTCCACCAAA ATCTCATCAA TCATGGTTTG ACGAAGGGTC AGATTTTCTT	10080
GGTTTTC AAC CGTCTTGCGC ATCTCCTTAG AGTAAAGTTC CTTGTCAGCC TGCACGAA	10140
GGGCACGGAC AGCTGGCCCC TTCCCTGTGT TTAGCATCTT CATCTGGATG TAAGTCTTGT	10200
CAATGGTTTT GGCCATCTCG CCACCGAGGG CATCGACTTC ACGCACGACA ATCCCCTTGG	10260
CAGAACCACC GATAGAGGGA TTACAAGGCA TGAAAGCCAG CATTTCAATA TTGATGGTCG	10320
CAAGCAGGAC CTTACAGCCC ATACGGCTAG CGGCCAAGGA AGCCTCAACC CCAGCGTGTC	10380
CCGCACCAAT TACAATAATA TCGTATTCTT CAGTAAATG ATAAGTCATG TTTCTCTCCT	10440
ATTCCTCAAG ATGAATGTGT CTTAGTTGGC CTTCCTCAATC TGGTAGGGCT GTTTTAAAA	10500
AGACTGGAAC TAGCTGGATA TTCTGGAGCT TATCCAAGTC AATCCACTCA CAGGGCTGCC	10560
TTTTCTCATC TTCCTGCATG GTCAACGGGG CATCTTCAAG CAAATCCACC AGATAATGAA	10620
ACTCGATATT GTGATAGGAA ACGCCGTCCA CTTCAAAACG ATTTTCAACC ACAAAGCTA	10680
GCTGCCCAGC TTGAGCTTTG ACACCCAGTT CTTCCTTCAC TTCACGGAAT ACCGCGTCTT	10740
CCGTGCTTTT ATTGACTTGA ATCGCACCTC CAATAGTGTA ATACTTGCCC TTGTCTTTGG	10800
TAACTAGAAG CTTGTGATT TGGACAATCA AGGCTGTAGC CCGAACACCA AAAACCGTAT	10860
TGTCTACTTT TGTCCGAAAG TCTTGTGAG TCATTCTTGT CCTTTCCCTT AAACGACACA	10920
AAAACAGTCA AAACACAAA GAAGTCAGG ACAAAAAAGC CTGCAACATC CAGG	10974

(2) INFORMATION FOR SEQ ID NO: 215:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 987 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 215:

CCCGTTATGA TTATGGATAG CGCTTTCAAA TTTTAAACT CCTATCCCAT CCTTTTATCT	60
ATATAATAAG TGAAATATA ATAAGTGTCA AGTAACTGAA GTGAATTTTA TAAAAAATT	120

1220

ACAAGCCAAA TTTGTAAAGT TTACACTAAG CCGCTAGgCA ATCGTCTATC AGAATATCCG	180
TTTATTTGTC AATAATCCGA GAAAATCTTG CAACGCTTAG AAGTCTATAA AACTATCAA	240
CATTTATATG ACTTGCGAAT AGCAATCCTG CTAAACCTTT CCACACTCTA TCTATACAAT	300
CAAGATAAAA ACATGTGTAA GCAAATCTGC TACACTTTAC TGGAGGACGC CAAGAATAAG	360
AAAAGCTACG ATAGGCTTGC TATCTGCTAT GTCCGTATTG GGATTTGTAC AGACGATTCT	420
AAACTTATCC AAAAAGGGTT CTCCCTTCTG GAGCTGACCG AGGAAACTTC TATGCTGTCT	480
CATCTCAAAA AAGAAGTAGA GACCCATTAT CAACCAAAGA AATTATAAAA AAAGTCGAGG	540
GAGCTCCTCG ACCTTTTCAT AGAATCGCCG AACGATTTAA CGAGAAAGTA TGACTTTTAC	600
GTTTATCCCA ACTCAATTAT GACATTTTTT TCAAAAGTCA ATATATCTCA CTTTTTCAAC	660
GACAAGAAAG AGGCTGATAA TCTACCAACC TCTTATTCTG AACCCATCAC TCCATCACTT	720
TTTAGCTTCA TFCGCTTTCT TAGCGACTGC AATCTGGTAT TCGACTTGGT CATTCGCCCTT	780
ACCGGTACAA CCATGAGCAA TTGTAGTCGC TCCTATCTGA TCGCTATTTT CAACCAATTT	840
TTTAGAAATC AGAGGGCGGC TCAAGGCAGA TACCAAGAGA TACTTTTGTT CATAATAGGC	900
ATGTGACTGA TGAGCCACTA GCACATAATC TGTAGCAAAT TCGTCCTTAA CATCAATGAC	960
ATAAGATTCT ACTGCCCAAA CCTTAAG	987

(2) INFORMATION FOR SEQ ID NO: 216:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2651 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 216:

CTGGGTCTTG TTCATAGTAG GTGTGGTtCT TTTTTCGAG TGTAGCCCAT AGCTTTGAGC	60
GCATAGTGGA TGGTAGTTGG ATGACAGCCA AAGTCAGAAG CTATTTTCAGT CAAATAAGCA	120
TCTGGATTGT CAGTAAGATA GTTTTAAAGT CTATCTCTAT CAACTTTTCT TGGTTTGTGTT	180
CCTTTTACTT GGTGGTTTAG CTCTCCTGTT TTCTCTTTTA GCTTTAACCA GCCATAAATG	240
GTATTACGTG AGATTTGGA AACGTGTGAT GCTTCTGTTA TACTACCTAT TCGCTCACAA	300
TAAGAGAGAA CTTTTTTACG AAAATCTATT GAATATGCCA TAAGAAGATT ATACCACATT	360
GTGTACTATT TTTGGTTCAT TTTACTATAT TTTATAAGTT ATAGGTAGC ATTCCAACCTT	420
CAAAGCACTA TAAAGTAAAT TGAAACAAGA ACAATACAAA CAATTCTCGT AAACGGATTG	480
CAACCACAAA AAAGCAAGCA TTCACAAGAA TACTTACCTA TCATGGGAGG AACAACCGTT	540

1221

CCTCTTTTTT ATTACTAAAA TTCAAAGAAT TCCAATGCTT TTTTCAAGAG CAAATCCGTA	600
TATTCTGGAT CTTCTTGGGC TACTTCTATT TCCCCTGAA CTTTTTCCAA ATCATCTGTA	660
ATCACTCCAT CTA CTCTCTAA GTGAAGAGAT TTGCTGATAG CTTCTGAATC ATTGACAGTC	720
CAGACATAAA GTTCTGATC CGTTGTCCAT AGTTTGCTTA CAAAATATTC ATCCAAGGTT	780
GAGTACTCCA TAGTATATCC TGTCGCTCTT GTTTTAGGAA AGACAGAATT GTAGGGCATG	840
ATGAAATAAA CTGGTAGTTC GGCATCATAC TGTCTTACTT TTTGACAAC ATGGTAGTCT	900
AAAGACTGGA TTTGATGTCC ATAAATCTTG AGCTTTGCAG CATAACGGGC TAAAAAGCGG	960
TTTCATCATGT CTGGACTATC TTTTTTACTG GTTTTAATTT CAATTAGTAA TTTTGTACCA	1020
AGTTCGTTGG CTCGACTGAG ATAATCTTCA AAGCTTGAAA TTTTAGTCTG GTAGCCATTT	1080
TCAAAAATAT CAATCCCTTT AAGCTCCTCC AAGTTTAAGT CTTGAGGACT TTTATTGATA	1140
CCTGCTAGAT TTTTCAAGTT AGCATCATGC ATCATGACAA ACTGCCCATC TTTTGTTC	1200
TGCACGTCGG TCTCCACCAA GTCTGGTTTG AGTTGTGCTG TAGTTTCCAA GGACTCTACT	1260
GTATTTTGAA TCCCATTGTC ATTGGAAACC CCTCGGTGAG AAATAAGTTG AGGTAGATGA	1320
ACCATGGGAG CCTCCAGATA AATATAACCT TCTAAGGCAA AGAAAAGACT GGCACAAGTC	1380
ATGACACCCC ATCGCACGAT GTGATCTTTT TCTCTCCTAG GAAGCATATC CAGCTCCTTT	1440
CCTGTCAAAA ATGAAACAAA TTTAACCAAA AAATAAGTCA GAGCCATATA ATAGAGATTT	1500
TTAATCACGA CAAAATTCAA AATACCAAGA ATCAGAGACT CTCTCTGAGT GATATCATCT	1560
ACCAAAGTTT GAGCCAATAA TAAAGGAATC AAAGGAAGAT AATAATAATA ATGTGCTTTG	1620
AGCAAGATGT AAAATAAATT CCAAGCATAA AAAGTAATC TCTTCTTGGT TTTCTCCAAG	1680
CTAAACATCA CTGCTTCTCG AACAGTCAGC TGATCATATA CAATCTTCGG AAGGGCAAAC	1740
ATCAATCTGA CAGAGACATA GAGAAAGATA AGAGATAGAA GTAGGATGCT CAGCCACCAC	1800
ATCCAATATC TATCTTCTAA ATAAGCTTGG ATAACTCTG GAATGACGAT TTTATTAAGA	1860
TAATAAATCT TCAGCATTTT CCGTATAAAA GGAAACAGCA TAGCTATATA GAAAAAGATA	1920
AACAAGGCTT TAGCGCAAGT TAGCTTTTTC ATAAATCCAA AACTTTCATG GAAAACCTTG	1980
CGGATATACT CAATTAGCCT TCGCTTTTCA TTATAGAGGA GATGACGAGC ACCAATAAAG	2040
AGGAGTCCTA TTTGAAAATA AGCAACCAGA AGGTTAATTA CAATCAAGGC TAAAAAGCT	2100
AGACTAATCA ATGGAGAATG AGTAAGGATG GCTAAGACAT TGTATAGGA AATAAAAAGA	2160
TAACCTGTCT GATCTAATAA GAAGCTAGCC AACCATGAAT TGAATGGTAC CCACAAATAC	2220
TCCACTATCA TAAAAATCAA GAAAAATAGA AAGAGGATTT TATCAAGATC GAGGTAAATC	2280

1222

TGTTTAAGAC CCAATTTTTT AGGTTTTTCA GGTTTCATAG GCACTCCTAG TCAAATAATT	2340
GAGACAAGTC CAAGCCACCA AAAGGATTGT TTGATAAGCT ACTTTCCTGTC TCTAACAATT	2400
CCCTAGCTTG ATCCGACTCT AAGAAGGATT CGTAAACACG CGCCGTCATC CGAGCATCCT	2460
CTAAACTATT ATGAGACTGA CCTTGAAATC CAAGAAATGA GGCAACAGTT TGCAATTTGA	2520
GATTGGCAAT ACCATGTAAA TCTGAACTCC GACGTTCAAA AGCTTCATCA TACAAATCCA	2580
CCTTGTA CTG TTGGCTATAG TCTAAACCAT GCTCTGCTAA AATAGGTAAA TCACTTTTAG	2640
CAGCATTGTA G	2651

(2) INFORMATION FOR SEQ ID NO: 217:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 5638 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 217:

CGTTATAATA AACTTGTGAA AAAATTAACA AAGGATATCG TTCCTTGAAA GCTATGGAGG	60
AAAATATGGC TGATAAAAAA ACTGTGACAC CAGAGGAAAA GAAACTCGTT GCTGAAAAAC	120
ACGTAGATGA GTTGGTTCAA AAAGCTCTAG TTGCCCTTGA AGAAATGCGT AAATTGGATC	180
AAGAACAAGT TGA CTACATC GTTGCCAAAG CATCAGTAGC AGCTTTGGAT GCCCAGGAG	240
AATTGGCTTT ACATGCCTTT GAAGAAACAG GACGTGGTGT ATTTGAAGAC AAAGCAACTA	300
AGA ACTTGTG TGCTGTGAA CACGTAGTAA ACAACATGCG CCACACTAAG ACAGTTGGCG	360
TTATCGAAGA AGACGATGTA ACAGGATTGA CTCTTATTGC TGAACCAAGT GGTGTGTTT	420
GTGGTATTAC TCCAACAACA AACCCAACAT CAACAGCAAT CTTCAAATCA TTGATTTTCAT	480
TGAAGACACG TAACCCAATC GTCTTTGCCT TCCATCCATC AGCACAAGAA TCATCTGCTC	540
ATGCAGCTCG TATCGTCCGC GATGCAGCTA TCGCAGCTGG TGCTCCTGAA AACTGTGTGC	600
AATGGATTAC TCAACCATCT ATGGAAGCAA CAAGTGCCCT TATGAACCAC GAAGGTGTTG	660
CGACAATCCT TGCAACAGGT GGTAATGCCA TGGTTAAGGC GGCTTATTCA TGTGGTAAAC	720
CAGCTCTTGG GGTAGGTGCC GGAAACGTT CAGCTTATGT TGAAAAATCA GCAAACATTC	780
GTCAAGCAGC ACACGATATC GTCATGTCTA AATCATTGTA TAACGGTATG GTCTGTGCAT	840
CTGAACAAGC AGTTATCATT GATAAAGAAA TTTACGATGA ATTTGTAGCA GAGTTCAAAT	900
CTTACCACAC TTACTTTGTA AACAAAAAG AAAAAGCTCT TCTTGAAGAG TTCTGCTTCG	960
GCCTCAAAGC AAACAGCAAA AACTGTGCTG GTGCAAAATT GAACGCTGAC ATCGTTGGTA	1020

1223

AACCAGCAAC TTGGATTGCA GAACAAGCAG GATTTACAGT TCCAGAAGGA ACAAACATTC	1080
TTGCTGCAGA ATGTAAAGAA GTTGGCGAAA ATGAGCCATT GACTCGTGAA AAATTGTCAC	1140
CAGTTATTGC AGTTTGTAAA TCTGAAAGCC GTGAAGATGG TATTACTAAG GCTCGTCAAA	1200
TGGTTGAATT TAACGGTCTT GGACACTCAG CAGCTATCCA CACAGCTGAC GAAGAATTGA	1260
CTAAAGAATT TGGTAAAGCT GTTAAAGCTA TTCGTGTTAT CTGTAAGTCA CCTTCTACTT	1320
TTGGTGGTAT CGGGGACGTT TACAATGCCT TCTTGCCATC ATTGACACTT GGATGTGGTT	1380
CTTACGGACG CAACTCAGTT GGGGATAACG TTAGTGCCAT TAACCTCTTG AATATCAAAA	1440
AAGTCGGAAG ACGGAGAAAT AACATGCAAT GGATGAACT TCCTTCAAAA ACATACTTTG	1500
AACGTGATTC AATTCAATAC CTTCAAAAAT GTCGTGACGT TGAACGTGTC ATGATCGTTA	1560
CTGACCATGC CATGGTAGAG CTTGGTTTCC TTGATCGTAT CATCGAACAA CTGGACCTTC	1620
GTCGCAATAA GGTGTTTAC CAAATCTTTG CGGATGTAGA ACCGGATCCA GATATCACAA	1680
CTGTAAACCG TGGTACTGAG ATTATGCGTG CCTTCAAACC AGATAACATC ATCGCACTCG	1740
GTGGTGGGTC TCCAATGGAT GCTGCCAAAG TAATGTGGCT CTTCTACGAG CAACCAGAAG	1800
TGGACTTCCG TGACCTTGTC CAAAAATTCA TGATATCCG TAAACGTGCC TTCAAGTTCC	1860
CATTGCTTGG TAAGAAGACT AAATTCATCG CGATTCCAAC TACATCTGGT ACAGGATCTG	1920
AAGTAACACC ATTTGCCGTT ATCTCTGATA AAGCAAACAA CCGTAAATAC CCAATCGCTG	1980
ACTACTCATT GACACCAACT GTGGCAATCG TAGATCCTGC TTTGGTATTG ACAGTCCAG	2040
GATTTGTTGC TGCTGATACT GGTATGGACG TATTGACTCA CGCGACAGAA GCATACGTAT	2100
CACAAATGGC TAGTGACTAC ACTGATGGTT TAGCACTTCA AGCCATTAAA TTGGTCTTTG	2160
AAAATCTCGA AAGCTCAGTT AAGAATGCAG ACTTCCACTC ACGTGAGAAA ATGCATAACG	2220
CTTCAACAAAT CGCTGGTATG GCCTTTGCCA ATGCCTTCCT AGGTATTTCT CACTCAATGG	2280
CCCATAAGAT TGGTGCGCAA TTCCACACAA TCCACGGTCG TACAAATGCT ATCTTGCTTC	2340
CATACGTTAT CCGTTACAAC GGTACACGTC CAGCTAAGAC AGCAACATGG CCTAAGTACA	2400
ACTACTACCG TGCAGATGAA AAATACCAAG ATATCGCACG CATGCTTGGA CTTCCAGCTT	2460
CTACTCCAGA AGAAGGGGTT GAATCTTACG CAAAAGCTGT CTACGAACTC GGTGAACGTA	2520
TTGGGATCCA AATGAATTTT AGAGACCAAG GAATTGACGA AAAAGAATGG AAAGAACATT	2580
CTCGTAAATT AGCCTTCCTG GCTTATGAAG ACCAATGTTT ACCAGCTAAC CCACGTCTTC	2640
CAATGGTAGA CCATATGCAA GAAATCATCG AAGATGCATA CTATGGCTAC AAAGAAAGAC	2700
CAGGACGCCG TAAATAATTG TTTATCAGTC TAGAAGCAAG ACAAAAACCTC AATTTGAGGG	2760

1224

AAAGATCCAG TAATTTTCT ATGATAAAAG GCATCCTATC AAGGTTTTTG AACACCTGAT	2820
AGGATGCCTT TTTATGATAT TGAGGCCTTT TTGCCCTTTT TGAAAACTA GAATAGAAAC	2880
AAAATATATA ATAGATTGAA ACTAGAATAG TACATATCTG CTTCTAAAAC ATTGTTAGAA	2940
TTTCGATTTGA CTGTCCTGAT CGATTTGTCC TGTTCCTATT TCATTTTGAT ATATAAAAAA	3000
TATAGTATAG TAGACTGAAT CTAAAATAGT ACGAAACAAT TGCTAAAACA TTTATAGAAA	3060
TTAATTTTAC TTTTCTGATA GAGTTGTTC CATCTTATTT CAATTCACTA TAGTTTAATT	3120
TAAGAGTAGT ATTTACTAAG GCCCAATTAA AATCAAAGAG CAAACTAGAA AACGAGTGCC	3180
ATTCAGCTCA AAACACTGAT TTGAGATTGC AGATAAGACT AGCCCCCTCA TTAACAGATT	3240
TACGATAAAA CGATGACAAG GTGTGTTGCT TTTTGATTTC TAAAGAGTAT AATGATAGAT	3300
CTCTATAAAA TAAGTGCGAA GGAAATGAGC TTTTATAGTC CTTTCGTTTT AAAATACTAT	3360
CTCAGATATT CTTATATCGA CAAGAAGTTT TTGAGTCATT CCCTCATCAT ACATATTAAA	3420
TAAATAGTGG CTCATTCAAT TTTTCACTAG AATAATAAGC TAGTATAGTA AACTGAAATA	3480
AGATATAAAC AAATAAATG GAGCTTAACA TCCATTTCCT GCAATTTTTT AGAAACTACA	3540
GTGGACTATT CTAGATTCAA CATATTATAA AACTAGAGT AAAAGAAAAG GATTGGATCT	3600
TGTGTAATGC AGGATCCAAT CCTTTCATC ATTTTGTCCA ACTTTTGGAG GTTCCTACAA	3660
TGTAGTCGTC ATTAATAAAG ACAGATGGGA ATGACAGTGT TCCTATTTAT TTTGATAGAG	3720
ATCGATGAAT TCTTTAGATA GCAACTGAAT AATCTCTGTT GAAGCCATTT GGTCTTCTGC	3780
ATGCATAAAT AGCAAGGAGA ATCCTATTTT TTCTCCAGTA GCTTCTTTTT GTATGAGATT	3840
AGAGTGAATC TTGTGCGCTT CTAATAAGGA GTCTTCCGCT TCTTCAACTT TAATTTTCGC	3900
TTCTTTTAAA TTTCTGCCT TAGCTAGTTG GATGGCTTCA ATAAAGGATG ATTTGGCTGC	3960
TCCACTATTG GCAATGAGCT GAAAACAGAT ATATTCCATT TCTTCTGTCA TCTTATTTCT	4020
CCTATCCATG CAAGTGCTTG TTCCAGAACT TTGCTCCAT TCATCATTCG GTAATCCCGC	4080
ATATCAATGG TATCTACAGG GATATTTCTT GCAATTTCTT TCACAGCAAG TAACTCATAA	4140
CGAATTTGTG GCCCAATTAG AATGACATCT GCTTCATGGA TATTCTTTTT AGCTTCTGTC	4200
ATTGATTTTG CTTGGATAGA GATTTCAATC CCACGTTTCA TCGCACTTTG TTGCATTTTT	4260
TTAACAAGCA TACTTGTCGA CATTCCTGCA TTACATACTA ATAAATTTG TTTATAATC	4320
TTAACCTTCC ATTTCTTGT CAACAACCTT GTCATTAACT TTGATAAATG GAATGTATAG	4380
AAGAACTCCA AGTGCAAAGA TGATGAATTG AACTAGAACT GCTCTCACGT CCCCTGCTGT	4440
TGCTAACCAT GCATTTAAGA ATACTGGTGT AGTCCAAGGA ACTTGATATA ATGCAGGACT	4500
CATGAATTCT GTAACGTGTG CTAAGTAGCT GATTAAAATA CCAAGGACTG GAACTGTGAT	4560

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AAATGGAATA GCTAATGAAA TGTTATAAAC GATTGGGTAA CCGAATAATA CTGGTTCATT	4620
GATATTGAAG ATACCAGGTC CAAAAGATAA TTTAGCCACG TTTTtagaga CAGCATTGCG	4680
ACTCACTAAG AATGTTGCTA TTAATAAACA TAATGTAGAT CCACTACCAC CCATTAAAGC	4740
GAATGTTTGT ATTTGTGATA GGTGATGAT GTGTGGAATG GCTTGTCCAT TATTTGCTGC	4800
AGTGATGTTT TCAGTAATGT TAATTAATAG TAATGGTTCT AGGATGGCAC TGTAAATAAC	4860
TGCTTGGTGA ATACCAAATA GCCATAACAT ATTTCTCTAA GAGTAAATAA TAATGACCCC	4920
GATTAAGCTT GTACCAATAT GACGAATTGG TTCTTGAATA AAGATTGTAA TGATTGAGAT	4980
TAAGTTCATT CCAGTTATAT TGAATAATAA TGCTGAAACA ACCCCAAATA AGGAGATGAC	5040
GGTCATGACT GGAAGTAATA CGCTAAATGA TCTACTAACA GCTGGTGGAA TATTTTCACC	5100
AAGGTTTCATT TGTAAAGCTT TAACGTTTGA TAATTCATG AATAATTCTG TTGCAATAAT	5160
CGTACGATAA CCCCggcgaa CATTGCGCCT GTACCTGTGT TGTGAATGA AAGAACACCT	5220
GAAATGTTTA CCGCATCTTT TGCTCCGTCA GGAACACAG AACTGTATT TGGCATCATC	5280
ACAATTAAAG AACTAATGA TAGCATTGAT GCTGCTAACG GGTTCGAA ATCTCTGTTT	5340
TTAGCTAAGA AATAACCAAC CATTACAGCA ATAATCATAC CTGAAATACT TAAAGTACCG	5400
TTTGCAATTG TTATTCCCCA ATATTGGAAT CTTGTTAATG TATCCCCTTG GAAAATCCAC	5460
TTAAATACCG TGTTGTTCAA AAGAACGATT AAACCTGCCA AAATATATAA TGGCATTACT	5520
GTTACGAATG CATCTCTTAG GGTTTTAAA TGAATTTGGT TCCCTAGTTT ACCAGCAAAG	5580
GATGGCAAAA AAATTTTTTT GGGGGGGGGG GTTATTAAAC CCCCCTTTTT AAAAAAAAA	5638

(2) INFORMATION FOR SEQ ID NO: 218:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 4745 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 218:

CCGGAAGCTG TTGCCCTTGG AACTCCAAAT GAAGAAACAG CCTTGTCTT GAACTATTTT	60
GGTGTGGAAG CACCACGTGT TATCACTTCT GCCAAAGCAG AGGGGCAGA GCAAGTTATC	120
TTGACTGACC ACAATGAATT CCAACAATCT GTATCAGATA TCGCTGAAGT AGAAGTTTAC	180
GGTGTGTAG ACCACCACCG TGTGGCTAAC TTTGAACTG CAAGCCCACT TTACATGCGT	240
TTGGAGCCAG TTGGATCAGC GTCTTCAATC GTTACCCTA TGTTCAAAGA ACATGGTGTA	300

1226

GCTGTGCCTA AAGAGATTGC AGGTTTGATG CTTTCAGGTT TGATTTCAGA TACCCCTTCTT	360
TTGAAATCAC CAACAACACA CCCAACAGAT AAAATCATTG CTCCTGAATT GGCTGAATTG	420
GCTGGTGTGA ACTTGGAAGA ATATGGTTTG GCAATGTTGA AAGCTGGTAC CAACTTGGCT	480
AGCAAATCTG CTGAAGAATT GATTGATATC GATGCTAAGA CTTTGTAACT CAACGGAAAT	540
AATGTCCGTG TTGCCCAAGT GAACACAGTT GACATCGCTG AAGTTTGTGA ACGCCAAGCA	600
GAAATTTGAAG CTGCAATGCA AGCTGCCAAC GAATCAAACG GCTACTCTGA CTTTGTCTTG	660
ATGATTACAG ATATCGTCAA CTCAAACCTCA GAAATCTTGG CTCTTGGTGC CAATATGGAC	720
AAGGTGGAAG CGGCTTTCAA CTTCAAACCTT GAAAACAATC ATGCCTTCCT TGCTGGTGCC	780
GTTCACGTA AGAAACAAGT GGTACCTCAA TTGACTGAAA GCTTTAATGC GTAAGATTTT	840
GGGTGTCAGC TCAAATCGG AAAGTCTAGT TTGCCTTATA TCGCAAGGAG TTTCGGCTCC	900
TTTTTTCTAG GAGTGAAGTA TGTTAGAAAA TGGCGATTTG ATTTTGTGA GAGATGGGTC	960
AGACATGGGA CAGGCCATCC AGACTTCCAC AGGTAACATAT AGCCATGTTG CCATTTATTT	1020
GGATGGGATG ATTTATCATG CTAGTGGACA GGCTGGTGTG GTCTGTCAAG AACCGGCAGA	1080
CTTCTTTGAG TCCAATCATT TATACGACCT CTATGTTTAC CCAGAAATGG ATATCCAGTC	1140
GGTGAAGGAA AGAGCTTGCA AACATCTTGG AGCACCTTAC AATGCTTCTT TCTATCCAGA	1200
TGCAGCTGGT TTTTACTGCT CCCAGTATAT AGCAGAAATC CTACCTATTT TTGAAACTAT	1260
TCCTATGAAA TTTGGAGwTG GGGAGCAGGA GATTAGTGAT TTTTGGAGGG AGTATTACAT	1320
AGAACTAGGT CTGCCTGTTT CTCTGAACCA AGCTGGTACC AATCCTAGTC AGTTGGCAGC	1380
ATCGCCTCTG TTACAATGTA AAGAAAGGAA TCTTCATGAT TCAGATTTTT AATCCATCTC	1440
GTTTGACGAG ACAGCCATTT TTGGAGAATT GATCCGCTAT CTGGATCAGT ATGAGGATGT	1500
GATTCTACGG GAAATTAAGG CTCAATTTCC AGATGTTGCA GTTGATAAAC TCATGGAAGA	1560
GTATATAAAG GCAGGCTTGA TTCTACGTGA AAATAAGCGC TATTACCTCA ATTTTCCTAC	1620
GCTTGAATCA CTTGATAGTC TTGAACTGGA TCAAGAGATT TTTGTCAGAG AAGCTAGTCC	1680
GGTCTATCAA GCCTTGTTGG AGCAGAGTTT TGAGACGGAA TTGCGCAATC AAATCAATGC	1740
AGCTATTTTA GTTGAAAAGA CGGACTTTGC GCGCATTAAA ATGACCCTGT CCAATTATTT	1800
TTACAAGGTC AAACAGCAGT ATCCTTTGAC AGAAAAACAG CAGGAGCTCT ATGACATTTT	1860
AGGAGATGTT AATCCTGAGT ATGCCCTCAA GTATATGACG GCTTTTTTGT TGAAATTTCT	1920
CAAAAAAGAC CAGCTTATGC AGAAATGCCG TGATATCTTT GTGGACAGTT AGGTGTCTT	1980
AGCCTATATT GTGCAAAATG AAGATGGAAA GTATGAGTTG GCTATCGATT TTGATAAGGA	2040
GAGGTAACT TTCTACTTAG CGTGATTCTT TGTCTCTGAG TACATTGTTT GACTTTCCTT	2100

1227

AGTATTCGGT ATAAACTATA TGTAACCGGT AACACATATC GGAATAAACT AAAGGAGACA	2160
ATCATATGTC ACTTGAAAAC AAATTGGAAC AAGCAACAGG CGCTGTCAA GAAGGTTTTG	2220
GTAAGTTAC TGGAGACAGC AAGACAGAAC TTGAAGGAGC TGTTGAAAA ACAGTTGCTA	2280
AGGCAAAAGA CGTTGTAGAA GACGCAAAAG GTGCTGTAGA AGGTGCCGTT GAAGGTTTGA	2340
AAAACGTTTT TACTAAAGAA TAGGAAAAA TCAAGGGTTT CATTTCCTT TGATTTTTTC	2400
TATTCTTATA AATAATTTTC TGCACGCGT GTATCTCCTG GGTAGGATTC TTTCTGCCC	2460
TGGATGATTT GGTAACAATC GGCTCCCTTA CCCGCAATAA TAACTGCATC TAATTCGTGA	2520
TTTGTGATAG CCATTGCCGC CTTGATGGCT TCTTGGCGAT CCGCAATCTT TTCAACAGGA	2580
TGATTGATGT AGCTACTAAT TTCATCTGCA ATGGCCATTG GGTCTTCATA GTTAGGGTCA	2640
TCAGCAGTCA GAAAGACTTG AATCTCAGGG TGTGATTGA GGAGGAGGCC AAAGTCCTTA	2700
CGACGACTTT CTCCCTTGTT TCCTGTTGAT CCCAGAACCA GAGCAATCTT TCCGGTTTGA	2760
TGAGTTTCAA CCACATTGAT GAGTTTTTTC AGACTATCCC CATTGTGGGC ATAGTCGATG	2820
AAGACCTTGG CTCCATTTTT CTGAGTGAGG ACTTCCATAC GACCAGGAAC GCGGGTTGCA	2880
GCGATGCCTT TTTTGATGTC CTCAGACTT GCTCCGAGC GGAGACAAGC AAGTCCAGCA	2940
GCAACTGCAT TTTCTTGTT GAAGTTGCCA ATGAGTTGAA TATCATAATC TCCAGCGAGT	3000
TTACCCGTAG CTGAAAAGCT AAAGGCTTTG GAATTCTCGA TTTGGTTATC AAATTGGCTA	3060
CCATAGAAAT CATGGTCTTG ATCTTCAACC TGTCTTTCA AGACTGAGAA GTGGTCCATG	3120
TCACTGTTAA TGATGACTGC TCGGCTCTT TCCATCAAGA GACGCTGTG GTAGAAATAG	3180
TCTTCAAAGC TAGGGTGTTC AATCGGGCCG ATATGGTCTG GGCTGATATT TAGGAAAAC	3240
CCCACATCAA AGGTTAGACC ATAGACACGT TTGACCAGAT AGGCTTGACT GGAGACTTCC	3300
ATGATGAGGT GGGTACGGTC ATTTTGCACA GCCTGATTCA TCATGTCAA GAGGTCAATA	3360
CTCTCAGGGG TTGTCAACGC TGACTTAAAG AAAGTCTCGC CATCAAGAGT TGTGTTTATG	3420
GTCGACAACA TAGCAGGTCT ATGCCCTTGA GATAAGATGT TATAGGCGAA ATAGGCTGCT	3480
GTTGTCTTAC CCTTAGTACC AGTAAAGGCA AGGAGTTTGA GTTTTTCCTG TGGATTACCA	3540
TAGAACTCCA TGGCAATCAA ACTCATGGCT TTCTTTATAT CGTTCACAAT GATGACAGGG	3600
ATACCGACTT CGTAGTCCTT TTCAGCTACA TACCAAGCTA ATCCTTGTGT TATAGCAGAA	3660
AGAAGGTATT CTTTTTTAAA GGCAGCGCCT TTTGCGAAAA AAAGAGTGTC TTCTGTTACT	3720
TTTCGGCTGT CGTAGCTGAT GCTATCAAAA ATAACTTTGC TGTAGTTGTA GTGGTAATGA	3780
CCTTGGTCAA TAATTCGCG AAAAAGGCCA TCTTTCTTTA AAATATCTAA TACGGTTTCA	3840

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ATCTTAATCA TACTTTCTAT TGTAACCGA AAGTCGTAAA TTTACAAGTA ACAAGGAAAA	3900
GTTTATAATG GAAGATAAGG AGTTTTTCCT AGTTATCAAA ATTGAATGAG GAATCTATGT	3960
CGCACGAAAA CAATCACCAG CAGGCCCAGA TGTACGGGG GACTGCTTGG CTAACGGCTA	4020
GTAACCTTAT CAGTCGCCTA CTCGGGGCTG TTTACATTAT CCCTTGGTAC ATCTGGATGG	4080
GGGCTTATGC AGCTAAGGCA AATGGTCTCT TTACCATGGG TTACAATATC TATGCTTGGT	4140
TCTTGTGGT TTCAACAGCG GGGATTCCAG TTGCGGTGGC CAAGCAAGTT GCCAAGTATA	4200
ATACCATCGC AGAAGAAGAG CATAGCTTTG CCCTGATTTC GAGCTTCTTA GGCTTTATGA	4260
CAGGACTAGG CCTGGTTTTT GCTTTAGTCT TGTATGTCTT TGCTCCTTGG CTAGCAGACT	4320
TGTCTGGCGT GGGCAAAGAC TTGATCCCAA TCATGCAAAG CTTGGCTTGG GGAGTCTTGA	4380
TTTTCCCGTC TATGAGTGT ATCCGAGGAT TTTTCCAAGG GATGAATAAC CTCAAACCCT	4440
ATGCCATGAG CCAAATTGCT GAGCAGGTCA TTCGTGTAT CTGGATGCTC CTAGCAACCT	4500
TTATCATTAT GAAGCTCGGT TCAGGAGATT ATCTAGCAGC CGTTACCCAA TCAACCTTTG	4560
CTGCCTTTGT CGGTATGGTA GCCAGTTTTG CAGTCTTGAT TTATTTCTT GCCCAAGAAG	4620
GTTCACTCAA AAGAATCTTT GAAACAGGAG ATAAGATTAA CAGTAAGCGT CTCTTGGTTG	4680
ATACCATTAA GGAAGCCATT CCTTTTATCC TGACAGGGTC TGCCATCCAG CTCTTCCAGA	4740
TTTGT	4745

(2) INFORMATION FOR SEQ ID NO: 219:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1900 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 219:

CCTGATTGAC CTTATAATAA GGAACAAAAC ACAATGCACT ACCTTTTCAA CAAAAGAGTT	60
GCTGCTTGAT TAAAACCATC ACACCAGTTA TACCATTTTG CTTCATACCC ATCTTGAGCT	120
AGGATACGAT CTTCTAAATC AAAACAGAG TAAATCTTTC TTTCTCGCA AGCTTGCGCA	180
TAGAGATGAT ATAGTTCATC ACCACCATCT CTATCCCACT CAGCAGAAAT CGTATCCGA	240
CCTGCCAATA AAGCCTGATA AGCCCTGTGA TGCCCATCTG TAATCAGCAA ACAATCTCCA	300
AAGCAAGAA TACTGATTGG ATCGACTTGG ATTGTTTCTG CCGACTGGTA AAGCATCTGA	360
ATATCTTGCA ACTTCTTTTC TGATAAATAT AGTTGAGTCA GATGAAGATC TGCTATATTG	420
ACTTTTCATT CTTTCTCCTC AAGGGAATTC GATACTCACT TCTGTTTGCC TTAAATCGC	480

1229

CATTGGAAGC GGAgCTTGTC ATAAAAGGGA AACTCGATAA ACAGGACTCC CAAGCCCACA	540
CAGAGACTGG CAAGGACGTC TGATGGGTAA TGAAC'TCCCA GATAGACTCT TGATACCAGC	600
ACACTGACTA GGTAGAGGCC AAGGACGATT TGTACGATTT TTCTCCAGAC CTGATCTTTA	660
ATCCGCTGAC TAAGAATAAC AATCAAAGTC CCTACCATCA GCGTTACAGC TAGAGAATGC	720
CCACTTGGGA AGGAAAATCC CTTCTCCTCC ACCAGATGTA AAATAGCTGG TCGTGGGCGC	780
TGGTAGATAT TTTTAAAGGT CACGATTAAA AGACCTGCCA AAGCCAGATT TCCCAGCATG	840
AAGAACTTT CTATCTTCCA TCGCTTACGA TAAAAGACAA AAGCTGTAAT GACAACCCAA	900
GTGATAATCA CTGGGATATC AATCAGACGT GTGAGGGCTC GAAAAAGAAT AGTCAAATAA	960
TCTGGTAAGT CTCCTCGAAT GGCAGTCTGA ATCGATTGGT CAAAATTGAC CAACATTTCA	1020
GGGTAAAATT TGACCATGTA GCCAAGAATA ACGAAAAGTA AAAGGGCAAA ACTGCCCTTC	1080
ATTAAAAATG TTTGTTTATC TCTCATAATG TTTTAAGGTT GGTTC'AAGA GAACATACAA	1140
CAACCAGAAT GAAACGGAAA AGATAACACC TTCAATCAAG TTA'AAGGTA ATACCATGGT	1200
CATTAGGTAG TTGGAAAGTC CCAAAATTTT TCCAATATCA AAGTTAGCAA ACTTAGCGTA	1260
CAAAGGAACA GCATAACAT AGTTGAGAAC CAACATGGCC AAGGTTAAAC CAATAGTTCC	1320
AGCTAGAGAG CCTAGTAGGA AACGAAGGT TGTCCGTTCC TTTTTC'CAA TCAAAGCAAA	1380
TACGATGACA AAAACTCCCA AAGCTACGAT ATTCA'TCGGC AAACCAATGT AAGTATTCAC	1440
TCCTTGGCTG TTAAGAAGCA ATTTCAAGAG TGAGCGAAGC AAGAGCACTC CTAGAGmCsC	1500
AGGCAAATCC ATGACCACCA GACCCACAAG GACTGGCAAG ATACTAAATT CGATCTTGAG	1560
GAAAGATGCC GCTGGTAAAA GCGGAAAGTC AAAGTACATC AGCACAAATG AGATGGCTGA	1620
TAGAATTGCA ATGGTCGAAA GTCGACGTGT GTTTGTCATA ACAGGTTCCCT CCAATTTTCT	1680
ATAAATCAG AAGAAGTTGG AAAGGATTCC TCTATCTATT CTCAC'TTTT ATATCCCAA	1740
AGTTCCTCT TACTCTATTA AAGAAAACA AAGCAAGTGG TTACAATCCG GCTATAAATC	1800
TATCAAACA GACAAGGCTA TTCTTTCGTC TTCTCCCATC CAGACTATAC TGTCGGTTGT	1860
GGATCTCAC CACATCACGT TGCCTCACG GACTTCTTTA	1900

(2) INFORMATION FOR SEQ ID NO: 220:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 4692 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

1230

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 220:

GGTTTTCCAG CAGGAGCTTC TCCTTTATCA GAATGACCAT CCCATCTGCT CACGATAGAT	60
GAATAATGAT ATTTTATTACC ATGATAGTAA TTTGAAAAAG CCTAACCACC TCCTGAACCT	120
TCTCCATATG TCCATACTCC TCCATCTGGA TATTATACAG CAGCTGATGC AGCTCCCAAT	180
AATGTAAAC TTGAAATAAG AGCTAGAGCA AGTAATCTAT GTTTTTTCGT TTTCATTTTA	240
TTTTTCTTT CAAAAAAGC ACACCTTGAG CAACAATGCA ACAAATAAA TCCTCCTCTC	300
TCTTTTATG AAACCGCTT CTTATGTGAT AAGAATAACT TTTTATTAT TTGTTGTCAA	360
GGAAAAATC GAATTTTTTA GATATTTTAC TATATTACCT CTGTGAATAA TATTATATAG	420
TAGTTTTATT TCAAATAAT ATGCAACCAG TACTAACCA ATATAAATA GATGCCATTA	480
ACGAATTTTA TTCAAGTTT TCCCATTCAT ACTATACAAG TAAAAGAGAT GGTGTTAACT	540
AAAAGCAAT TCAAACTATT GTAAATTCC TAGCAAAAAG AGAGCCGAAA CTCTCTTTTT	600
TATCTTCTT TACTTTTTT GACTGGCATG AGTGTGATGT CTCTAACT AAAGTAAGCT	660
AGGATCAACA TGGCTATTGC TAGGAATATT TCTGTTGTA ATTGAAAAAT TTTCAGAAAA	720
GATAGAACCA ATAAATCAA GAGTGCCACT AAAATACATA CCATAGCGAC GATATTGACA	780
GTCCCTTTAA TGCTTTCTGG TGTCGCAAAT ACATAGAGTA GGAGCAGTAA AATTCCTAGG	840
ACTAAATAGA CCATCTTTCT CTCTTTCTAG CTCTTATCA GCTGATTTTT TCTTCTTGTT	900
AGCTTTCTCA CGCTCTGCTT TGTTAAGGAT TTGTTTACGC AAACGGATAG ACTCAGGCGT	960
TACTTCCATG TACTCATCGT CGTTCAAGAA CTCAAGAGAC TCTTCAAGTG TCAAGATACG	1020
AGGCGTCTTG ATAACAGCTG TTTGGTCCTT AGTAGCTGAA CGAACGTTGG TCATTTGTTT	1080
TGCCTTCGTG ATGTTAACTG TCAAGTCATT TTCACGAGAG TTTTCACCGA TGATCATTC	1140
TTCATAAACC TCAGTACCTG GGTGACAAA GATCGTACCA CGTTCTTCGA TAGACATGAT	1200
TGAGTAAGTT GTAGCCTTAC CAGCATCGAT AGAAACAAGG GCACCACGGT GACGTCCACC	1260
AATTTCCCTT GGAATCAATG GCAAGTATTG GTCGAAGGTA TGGTTCATGA TACCGTAACC	1320
ACGAGTCATT GATAAGAACT CAGTTGAGTA TCCAATCAA CCACGCGCTG GAACAAGGAA	1380
GACCAAACGA GTTTGACCAT TACCAGTTGA AATCATATCC AACATTTTAC CTTTACGTTT	1440
AGAAAGGCTT TGGATAACAG ACCCTTGGA TTCTTCTGGA GTGTCGATTT GTACACGTTT	1500
AAATGGTTCA CATTTAATAC CGTCGATTTC TTTTACGATA ACTTCTGGAC GAGATACTTG	1560
AAGTTCATAG CCCTCACGAC GCATTGTTTC GATAAGGATT GACAAGTGCA ATTCTCCACG	1620
TCCTGAAACA GTCCATTTAT CTGGTGAATC AGTTGGGTCA ACACGAAGGG AAACGTCTGT	1680
TTGCAATTCT GCCTGCAAGC GTTCTTCCAC CTTACGAGAA GTTACCCATT TACCTTCTTT	1740

1231

ACCAGCAAAT GGTGAGTTGT TGACCAAGAA AGTCATTTGA AGAGTTGGCT CATCGATGTG	1800
TAGGATTGGA AGAGCTTCTA CTGCATCTGT CGGAGTGATG GTTTCACCGA CAAAGATGTC	1860
TTCCATACCT GAAACGGCAA TCAAGTCACC CGCTTTGGCT TCTTGGATTT CACGACGTTT	1920
CAAACCAAAG AAACCGAAGA GTTTTGTAAAC ACGGAAGTTT TTAGTTGTAC CGTCAAGTTT	1980
AGAAAGGGTA ACTTGGTCCC CAACCTTAAC TGTACCACGG AAGACACGAC CGATACCGAT	2040
ACGTCCAACG AAGTCATTGT AGTCCAAAAG TGACACTTGG AACTGCAAAG GCTCATCTGA	2100
GTTATCTACT GGAGCTGGGA TATGGTCGAT AATCGTGTCA AAGATTGGTG CCATAGTCGC	2160
TTCTTGGTCA GCTGGATCAT CTGACAATGA AGAAGTTCCG TTGATCGCTG AAGCATAAAC	2220
CACTGGGAAA TCAAGCTGGT CGTCATCTGC ACCAAGCTCG ATGAAAAGTT CCAAGACTTC	2280
ATCCACTACT TCTGCTGGAC GAGCTGATGG CTTATCGATT TTGTTAACAA CCACGATTGG	2340
GACAAGGTCT TGTTCOAAGG CTTTTTTCAA TACGAAACGA GTTTGTGGCA TGGTTCCTTC	2400
ATAGGCATCT ACGACCAAGA CAACACCGTC AACCATTTTC ATGATACGCT CAACTTCTCC	2460
ACCAAAGTCC GCGTGTCTTG GTGTGTCCAT AATGTTGATA CGAGTTCCGT TGTAAAGCAAC	2520
GGCAGTATTT TTAGCAAGGA TGGTAATTCC ACGCTCTTTT TCGATATCGT TTGAGTCCAT	2580
AGCACGCTCT GCCAATTCAAG TCCGTGCATC AAGCGTTTCT GATTGTTTCA ATAATTCGTC	2640
AACCAGGGTT GTTTTACCGT GGTCAACGTG GCGGATAATC GCAATGTTAC GGATATCTTC	2700
TCTTAATTTT GTCATGATTT CCTCTATAAT ATTCAAAATT TATTTTCTAA CTGAACGATT	2760
ATACCATAAT TTCAAATAAA TAACATAACT CAAGCAAAGTG TAAATGTTTT CACTCTGCTT	2820
TTCTTTTCAC GTCAAGCCTT TTCAAAGCGA GCGACTTATG ATAAGATAGG CACAGTATGC	2880
GTTTAGATAA TTTATTAGCT CAAGAAAAAA TCAGCCGAAA GGCCATGAAG CAAGCACTCC	2940
TCAGAGGGGA AATTCTAGTC GATGGTTGCC CAGCCGCTC CCTAGCTCAA AATATCGATA	3000
CAGGACTACA AGAACTCCTT TTTCAGGATC GAATCATTTCA AGGCTATGAA CACACCTATC	3060
TTATGCTTCA TAAACCTGCT GGTGCCGTTA CAGCCAACAA AGACAAGGAA CTTCCGACCG	3120
TCATGGACCT GCTTCCATCT AACATCCAGT CTGACAAGCT CTATGCCGTT GGCCGACTGG	3180
ACCGAGATAC AACGGGACTC CTCCTCTTGA CCGATAACGG TCCCTTGGGC TTTCAGCTCC	3240
TCCATCCCCA ATATCATGTC GATAAGACTT ACCAAGTTGA GGTTAATGGA CTTCTAACAC	3300
CTGACCATAT CCAAACCTTT CAAAAAGGAA TTGTCTTTTT AGATGACACT GTCTGTAAAC	3360
CCGCAAAACT AGAGATTCTA TCTGCAAGTC SCTCCCTCAG TCAAGCCTCT ATCACCATTT	3420
CAGAAGGAAA ATTTTCATCAA ATCAAGAAAA TGTTCCTCTC GGTGGGTGTT AAGGTGACTA	3480

1232

GCCTCAAAAG AATCCAATTT GGGGACTTCA CATTTGAACCC AGATTTAGCA GAAGGTAAC	3540
ACCGCCCTTT GAACCAAAAA GAGTTACAAA TCATTAAAA CTATTTAGAG ATGAGTCGAT	3600
AAAACAAAA AAGCTTTAA ACTAAAGCTT TTTTCTTTTA TTTACCGAAA AATTAAGGCG	3660
ATTGCTACAA TCCAGTTAAC TACAGAAATC ACAATTCCTA AGATATTAAG AATCTTTTCT	3720
ATTTTATAGT CTAATGTGA CTCTTTTGG TATGAAATAG CCAAGACCA TCCTATGATA	3780
CCCAAAATCA GGCCTACAAT TGGAAATAAC AAACCAAGAA TAATCGACAA GATACCCACA	3840
AAAAGTGGAT TTTTCTTCTT TTCTTTTATG TTCTAAGAAC TCCTTAAAT TTATACAAAT	3900
TAATTATACT ATAAACAAT AGCTTCATCC TATCATTCGA CTAATTTGGA AATAAGGTTA	3960
GCTAGTCTTC ACTTCCCTT TCCAAGAATC CAAGCCATAA GAAAGGATAT AAATCTCAGA	4020
AAAACCTTGT TTTTCAAGT AAAGAGCTGC ATTTGTAAC CGTTGCGCAC GTTGGTTTTC	4080
GTAGAGAAGG ACAGGTTTAT CTTTACGAAG GGCTGCAAGA CTAGTTTCA ACTGACTTGA	4140
AGGAATATTG CGTGACCAA GGATATGTTT TCTGTGGAAT TCTGTGGGT CGCGCAAATC	4200
AATCAATTGA CCCGTACGAA TCAAGGCTTC AAACCTCTCA TTGTCCACAA TTTTAGCCGC	4260
ACGGCGAATA CGAAGATAGT TAAAGCCCAT CCACGCCAAC ATTGCTAGTA TAAGTGCCCA	4320
CAAAATCCAA GTAACCATTA GTTCTTTTCT CCATTTTCT CAATATAATC CAATTCTACC	4380
TTGTGCTCTC TGCGAAGAAC TGCTTCTGCC TCTAGATAGT CTAATTTATC CATCAACCCT	4440
GCATCGTAAA TCCGAGATAG TTCCAACCTC ATCAGTTCAA TATCATATAA GCGTTTCCC	4500
ATGTAAACAA TAATACCAA TCGTTTGAGG AATTGCTGCA CATCATAGAA TGTTTTCATA	4560
AGACTCATTC TAGCAAAAT TTGTGTTTTT TTCAAGAAGA GACTCACACA ATGCTCCTTA	4620
TTTTCCTATC TTCTTTAGCG ATTCTAAGGC AAGTATGGTA CAATAAAAAAC ATGGGGATTC	4680
AACAATTACA TT	4692

(2) INFORMATION FOR SEQ ID NO: 221:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 706 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 221:

GCTAAAAAGC TGATAATCTT CGACTCCTGT ATATGATGTG TCTTTTCATG TAAGACACGC	60
CGCGCCAGAA TCATGGCAAG AGCTGCAAGA CTGGCAAGTA AGAAGCCGAT AAGATAGGCA	120
AAAAGATAAG TGAATTTGAC AAAGAAAGTC AAAAGAACTA GGAAACCAAA GCCTCCTCCA	180

1233

AAAACTACCA AAGTCTTTCG TAAATCCCAG ATTTTATCCA ACTGCTTGAC GAGGGAAGTC	240
GTCTGACGAA CGCTACAAT AGTTGCTAAC ATACTTCCTA AAAAGAATGG ATAGACATGA	300
GTTAAACTGG AGAAATAAAC AGAGGAATAA GAGGTCAC TA GAAACTACC AATAAACATG	360
GAGAAGAAAC TGATCAAGAA GGCAACAGCA GATAAGAGAA AGACCATCCC CTTCAACTGA	420
CCATTTGATT TAGCTTGTTT GGATAAGAAC CAACTGCCA ATCCCCAAAG AATATAGTAG	480
TGAACCTCAA CTGCCAACT CCAATTATGA ACAAACAAT GAGGAATGAA CTGAGATTCA	540
TAACTCCAC CTGTTAGGAG TTCATAGAAG TTGGTCATAA AGCCTAAGAC GCCCGCAATC	600
TGGCCACCAA TTCCAGCAAC ATAGTCTTGG CGAACCAAGA AAGTAAAAGG CATGGTCACC	660
AAGACCATCA AAACCACAGG TGGCACAATC TCGATAAAAG CGTCTT	706

(2) INFORMATION FOR SEQ ID NO: 222:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3236 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 222:

CAGCTGATGG GCAATATCAG TCATAGAAAT TTTTCAATT AACTTTTGAG CAATTTTGTG	60
GTTGATGATA CGAGGGATTT GGTGATTTT CTTTACCAGG GGAGTCTCAG CAACCATCAT	120
TTTGAACAG TGATAGCACT TGAAACGGCG TTTTCTAAGG AGAATTCTAG AAGGCATACC	180
AGTTGTTTCG AGGTAAGGGA TCTTAGACGG TTTTGAAAG TCATATTTCT TCATTAGACT	240
TCCACAATCA GGGCAAGATG GAGCCTCATA ATCCAGCTTA GCGATAATTT CTTTGTGGGT	300
ATCCATATG ATGATATCTA GAATCTTGAT GTTTGGGTCT TTAATATCGA GCAGTTTGT	360
GATAAAATGT AATTGTTCCA TATGATTCTT TCTAATGAGT TGTTTGTGTCG CTTTTCATTA	420
TAGGTCATAT GGGACTTTTT TTCTACACAA AAATAAGCTC CATAATATCC ATAGGGGATT	480
TACCCACTAC AAATATTATA GAGCCCGAAA ATATGGGAAA ACTGATCCTT GTTCTGCTT	540
TTGTCTATAG AAGAATAATA AAGATTATCT TCTTCAAATT CTCCGATATT CTCTAAAGTT	600
TTGTGCAAGT TGCACAGAAC TTGTTTATTT TTTTGGTCAT CTTGCCATAG AAATATAAAG	660
CGTTTTCATA TATAATATAA TTATCAAAAG ACAAAGGAG TTCACCTCAT GGTAGAATTG	720
AATCTTAAAA ATATTTACAA AAAATATCCA AACAGCGAAC ACTATTCAGT TGAAGATTTC	780
AACTGAACA TCAAAGATAA AGAATTTATC GTTTTCGTAG GACCTTCAGG ATGTGGTAAA	840

1234

TCAACTACAC	TCCGTATGAT	TGCTGGTCTT	GAAGACATTA	CAGAAGGTAC	TGCATCTATC	900
GATGGCGTAG	TTGTCAACGA	CGTAGCTCCA	AAAGACCGTG	ATATCGCCAT	GGTATTCCAA	960
AACTACGCTC	TTTACCCACA	CATGACTGTT	TATGACAACA	TGGCTTTCGG	TTTGAAATTG	1020
CGTAAATACA	GCAAAGAAGA	CATTAACAAA	CGTGTTCAG	AAGCAGCTGA	AATACTTGGA	1080
TTGAAAGAAT	TCTTGGAACG	TAAACCAGCT	GACCTTTCAG	GTGGTCAACG	TCAACGTGTT	1140
GCCATGGGGC	GTGCGATTGT	CCGTGATGCG	AAAGTATTCT	TGATGGACGA	ACCTTTGTCA	1200
AACTTGATG	CCAACTTCG	TGTATCAATG	CGTGTGAAA	TCGCTAAAAT	TCACCGTCGT	1260
ATCGGAGCTA	CAACTATCTA	TGTAATCAC	GACCAAACAG	AAGCGATGAC	ACTTGCAGAC	1320
CGTATCGTTA	TTATGTCAGC	TACTAAGAAC	CCTGTGGTA	CAGGTACTAT	CGGACGTGTA	1380
GAACAAATCG	GTACTCCTCA	AGAAGTTTAC	AAAAATCCAG	TTAACAAAT	CGTTGCAGGA	1440
TTCATCGGAA	GCCCAGCTAT	GAACCTTCATC	ACCGTGAAAT	TGGTTGGTAG	CGAAATTGTT	1500
TCTGACGGTT	TCCGTTTGAA	AGTGCCAGAA	GGAGCATTGA	AAGTTCTTCG	TGAAAAAGGC	1560
TACGAAGGAA	AAGAATTGAT	CTTTGGTATC	CGTCCAGAAG	ACGTGAATGC	AGAACCTGCT	1620
TTCTTTGAAA	CATTCCCAGA	CTGTGTTGTA	AAAGCGACTA	TCTCTGTATC	AGAAGCTGCTT	1680
GGTTCAGAAT	CTCACCTTTA	CTGTCAAGTT	GGTAAAGACG	AGTTTGTTGC	AAAAGTTGAT	1740
GCTCGTGA	ACTTGCAAAC	AGGTGCAACA	GTTGAGCTTG	GATTTGACTT	GAACAAAGCA	1800
CACCTCTTCG	ATGTAGAAAC	TGAAAAACA	ATCTACTAAA	ATAAATAAAA	TTCAAAGCAC	1860
TACAAGAAAA	GATATCTCTT	TATCAATTGT	AGTGGAGAGA	TATCAGTTAA	TCTAGGGAGA	1920
GAAACAAAAT	GCTTCTCTCC	TTTTTGCTAG	AGAAGTCATA	TTATGCATCT	ATATTGTGAT	1980
GCTCTTTAAT	ACTCTTCGAA	AATCTCTTCA	AACCACGTCA	ACGTCGCCTT	GCCGTACGTA	2040
TGATTACTGA	TTTCGTCACT	TTTATCTGCA	ACCTCAAAGA	TGTACTTTGA	GCAGCTTACG	2100
GCTAGTTTCC	TAGTTTGCTC	TTTGATTTC	ATTGAGTATT	ATTTGTGGGT	ACCATCTACA	2160
AGTGAAGCTA	TATGCGTAAA	CTACGTGAGC	AATTGAATTC	GAAGTAGAGA	GGTAATAATA	2220
AATTTATGCT	ATAGTTATGG	TGACTTGAT	GCTTTTGATT	CTAGTTTATC	AAATAATAGA	2280
TTAGAATTGT	CAGATAATAT	CATTTTGTGT	TATAATGAAG	AAAAAACAGA	GGTGTTCAAA	2340
TGTCAGAAGC	AGGTCATAAG	TTTTTAGCAA	AATTGGGGAA	AAAACGCTTA	CGTCCAGGTG	2400
GAAAGCGTGC	CACAGATTGG	TTAATTGCAG	AAGGAGGATT	TTCAAAAGAA	AAGAGAATAC	2460
TAGAGGTTGC	GTGTAATAGG	GGAACACAG	CAATTGAGTT	GGCACAGCGT	TTTGGTTGCA	2520
AGATAACTGC	TGTTGATATG	GATGCTCAAG	CTTTAGAAGT	GGCTAAAAAA	TCTGCTGGAA	2580
CGGCAGGTGT	TGCTCATTTA	ATCAGTTTGT	AAAGAGCAAA	TGCAATGAAA	CTTCCTTATC	2640

1235

AAGATGCTAG TTTTGATATT GTTATAAATG AAGCTATGCT GACTATGCAA GCCGATCAAG	2700
CTAAGAAAAA ATGTGTAATG GAATATCTAA GGTATTAAA ACCTGGAGGT CTTCTCTTGA	2760
CACATGATGT GCTTCTTAAG GAAGCTAAAG AGTCTATCAG ACAGGAATTA TCACAAGCAA	2820
TTCATGTAAA TGTAGGTCCT TTAACCTCAAG ATGGTTGGGA ACAGGTGATG ATAGAATCAG	2880
GTTATTGTGA TGTGAAAGCA TTGACTGGTG AAATGACATT AATGAAATTA TCGGGTATGA	2940
TTTATGACGA AGGTTTGCTA GGAACCTTGA AAATTTGTGT AAATGCTTGT AAAAAGGAGA	3000
ATAGAAAGCA GTTTTAACT ATGTATAAAA TGTTTGCTAA GAATAACAG AAATTGGGCT	3060
TTATTGCGAT GGCTAGTTAT AAATCGTCAA AACGTTAGAT AATTATTGAA GTTAACTTTT	3120
CCTTTTTTCT TTCTTAAAAA ATATGCTATA ATAGAGAGTA AAAAATTTG AAAGAAAGAA	3180
AAAGATGAAT TTAAAGATT ACATTGCAAC AATTGAAAAA TATCCAAAGG GTACCG	3236

(2) INFORMATION FOR SEQ ID NO: 223:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2885 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 223:

CCTGACTTTT CAAATTGGTT AGTTGCCAC ACTTGGTTTA TATGGTCGTG GAAAGCATGG	60
CTATTACTTC TCAAAGGGCG ATTTCTCACC CCATGAAAAG TGTCTATTTT TGTTTAGGTT	120
TGTAAGTTAA TTCATTGTCA CATATTACTC TTAACTGAT TGAGTGAGTA CCGCTTATAT	180
TTGATGCCAA ACGCCTTAAA AGTGTTACCC TCAAGTCCTT TTAGAATACG GCTATAATTC	240
CGCTCATTGT AAATATCTT AAGCTCATCA CTATCTAGGT TGGTATTAAA AATGGTATTT	300
TCACGATTGT TTAGCACGTC AAAGAGTAAA TCCTGCTCCC AGTCACTCTT AGGCTTAATA	360
ACAGCATTTT TTGCTCCTAA ATCATCAATA ATTAAGTAAT CAACAGACTT CATGAGTTCA	420
GTAGCTTCAA ACTCTGTAAG TGTGACACCT TTACCATAAT TCCACCCCTC TTTAATTTGT	480
TTGATCATTT CGGTTAGGCT TACAAAAAGC AACTCTTAG GTTCTCCTTT TGTCTTATAC	540
CCCTCATTTA TACCTTTGGC AATAGCAACT GATAAAAGTG TTTTCCAAT CCCTGTACCT	600
CCTGTGATAA GCGTATTTCC CCTCATGCCA TCAAGATATT TTTGTACCTG ACCTTTTGCA	660
AATTCTAAAA ATCGCTTTTC TTCTGATGTT ACAGCATTA AATCATCAAA AGTTTtagTT	720
TTAAACTCAT CTGCTACATA GCTCTTATTG CTCATCAACA CATTATAAGT TTGCATATAT	780

1236

AGTTTAGCAT TCAAATTATC AGCAATCGCA TCTTCTTCAT CTTGCTTTTT CTGTTCTTCT	840
TGGCATTGTT CACAATAGGG TGGGATACAG CGAACTTCTT TTATTGCCTC TCCGTTCTCA	900
TTCCACCCCA CTACTACATG TCTTCTCCTT TTGATTGTG TTAGCTGTAT TTCATGCTTA	960
GGACACAATT CGTCTAGTTT AAATGTCTCA ATATTTCCTA AACTAGATTG TAATGATTTC	1020
ATTTTCTGAC CTCCTAAAAT GGTTTTCTT GTGTTGGTAT CCAATCTTCA TAGCTGGTAG	1080
GCTCTAGTTG ATTGGTTTGC TGTTTTTTAG CCTCACGCGC TGCCCTGCTA TTTCTAACAA	1140
GTTCCACCGT CAATAAATTG TCCTGTTTCC AACGGTTAAG GATTACCTTG ATGTATGCAA	1200
AGTTTGCTTT ACCCTGACTG ACAGCCTCTT TTAACGCCTC ATGGATAAGC TCTGGGCTAA	1260
AATCTTCTAG CATATACTGC AATTCTTGAA TCTGTAACGG TGACAATGCT TTACCTGTCT	1320
CAGCTCGCTT CATATTCAAC AAGTCGTCTA TTTCCACACT GGTTACTTTT TTATTTACAA	1380
AATCAGAAAT CAGTTGAAAA ATGTTTGGAC TTTGTAGCTG GATTTCAGCC ATTACCTCAT	1440
CAAAATCTGC TTGTGTCATG TTGTCTAAAT CTAGTGTCTT TGCATGCTT CCTCAAACCT	1500
CTCTATAAGA CAACTTTTAT TTGCTTTCTG AGTTCCATTT TTAGAGTTAA AAAGAATATC	1560
TTTTAAGGTT ACAGTAGCCT CTAAATACTC CTTTTCAGCA TGCTCTATAT ACGCCTGTTG	1620
CTCTGCTTCG TTCTCAAAAA AGTGCTTAGC TTGGCGTTTA AAGAATGCTT TTCGCATAGC	1680
GTCCATTTCA AAAATACCAG GGGCGAAAAA CATTCCTCGTA GTGCTTTTAG AGACCGCTTC	1740
GATTTTATGG CTTTCATTCA ATTCAGGAAG TTCAATCCAA AGTAAACGGG ACAACTCATC	1800
TTTGATGGAT TTTGTCTGAC TTTCCAATAA AGAAAGGATT CTTAGGCCAT TTTCTTCGCT	1860
AATTTCTCGC ATTTCTGCGC TAATTCTGTC TATACGTCTA GTTAAATTCT CATATGTTGT	1920
TTCTGTCATG TTTTACCTC TGTTCTTTG TTGGTGTGAT TTTTGTAGCTT ATTTTTTTAC	1980
TTCTAAACAT CATTGTCTTA ATTTCTGAT AACTCATTTT CAATTCAATC ATAGCTATTG	2040
CCATATCCTC AAATGCCTGG TACTGCTCCA ACTCCTCACT AGTCAAGCTA TCGATACCGT	2100
TATAGCCCCC ACGCTCTTCT CTTAACTGCT TAGCGTTCAT GTCTGTTACT GCCTTTAGTA	2160
GCAAGTTGTT CATGGTGCTA TGCGCGTGCT TTGGTGCATT AGGCCATGTT TCTATACTGT	2220
CATGCAAGGT TTTTCTTTTC GGTTTTTCTA GCGCCCTCTG CAGACGAATT TCAGAAAGTT	2280
CCTCACGCAT TTCAAAGAAT GCTTTGACTA GGTTTAGTTT GAATTGCCGT ACTGTTTCGG	2340
TATTCTTTAA ATAAGTGATC AGAAAAGTAG CCTGTGCTC GTTCAGAATA TAGGATTTTT	2400
TAGGTTGTCC TCTAGTATCT AATTTATGGA TTTTAAATCC AAGTATTTCC AACTCTTCAA	2460
AGTCAGCCTT ATTTCTCTT ATTAAGCGCG TGATAGTGTG GTGTTGTACT TCAGCACATT	2520
CAGCGATGAT CTCGCTTG TGGTACGGCT CTTTCTTACC GTCCATGTAA ACTAGTTCCA	2580

1237

TTACGGTTCT ACCTCCTGTA TAAATCTGGT TAGCTTACTT TTAAATTGCC TCCTCTAGCC	2640
TCTTTTMTAG CCTCTAAAC GGCTTTGGCT AGTGGTTAAT ATTATTTACC ACTTGTCTCT	2700
ATAAACCTGT TAGAGGCCTT TATAACGACT TGTATCGCTG TATCGATATC CTCCGTGGAA	2760
TAGTAGATTT ATTTTCTAAT ATCATTCAAG ACTTGTTTAA CCCATTTCTT GAAAGAAATA	2820
AAATTACATC TTCTTTATCC TTGGCATCTG CTTTGTCTGA GACAAATTAG AATGTCAATA	2880
CTTGG	2885

(2) INFORMATION FOR SEQ ID NO: 224:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3144 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 224:

TATCAATCCT TTCCCATTAT AGGAGCAACA GAGTGGGAGT AGTCATCTAA GGACTAATTT	60
ATGTATTTTT ACGAGTCAGT ATCTTGGGAT ACTGGTTTTT ACTTTTCTAG ACTTTTGTAC	120
TACTTGTTAA AACTGGGATA ATTTTCGACT GTTTAACAGT TATTATGCAA AGTCTAAAAG	180
ATTAGAATTG TCAAAACAAT CCGTCTAGGC TTGATTTTAT CCTTTATTTA CTATAAAATG	240
AGAAGGAAAA ATGTCAAAC TTTATATTGC AAATAGGAGA AATCATGACA AAAACATTAA	300
AACGTCCTGA GGTTTTATCA CCTGCAGGGA CTTTAGAGAA GCTAAAGGTA GCTGTTCAGT	360
ATGGAGCAGA TGCTGTCTTT ATCGGTGGTC AGGCCTATGG TCTTCGTAGC CGTGCGGGAA	420
ACTTTACTTT CGAACAGATG GAAGAAGGCG TGCAGTTTGC GGCCAAGTAT GGTGCCAAGG	480
TCTATGTAGC GGCTAATATG GTTATGCACG AAGGAAATGA AGCTGGTGCT GGTGAGTGGT	540
TCCGTAAACT GCGTGATATC GGGATTGCAG CAGTTATCGT ATCTGACCCA GCCTTGATTA	600
TGATTGCAGT GACTGAAGCA CCAGGCCTTG AAATCCACCT TTCTACCCAA GCCAGTGCCA	660
CTAACTATGA AACCCTTGAG TTCTGGAAAG AGCTAGGCTT GACTCGTGTC GTTTTAGCGC	720
GTGAGGTTTC AATGGAAGAA TTAGCTGAGA TCCGCAAACG TACAGATGTT GAAATTGAAG	780
CCTTGTCCA TGGAGCTATG TGTATTTTAT ACTCTGGACG TTGTACTCTT TCAAACCACA	840
TGAGTATGCG TGATGCCAAC CGTGGTGGAT GTTCTCAGTC ATGCCGTTGG AAATACGACC	900
TTTACGATAT GCCATTGGG AAAGAACGTA AGAGTTTGCA GGGTGAGATT CCAGAAGAAT	960
TTTCAATGTC AGCCGTTGAY ATGTCTATGA TTGACCACAT TCcAGATATG ATTGAAAATG	1020

1238

GTGTGGACAG TCTAAAAATC GAAGGACGTA TGrAGTCTAT TCACTAyGTA TCAACAGTAA	1080
CCAACTGCTA CAAGGCGGCT GTGGATGCCT ATCTTGAAAG TCCTGAAAAG TTTGAAGCTA	1140
TCAAACAAGA CTTGGTGGAC GAGATGTGGA AGGTTGCCCA ACGTGAAC TGCTACAGGAT	1200
TTTACTATGG TACACCATCT GAAAATGAGC AGTGTGTTGG TGCTCGTCGT AAAATCCCTG	1260
AGTACAAGTT TGTGCTGAA GTGGTTTCTT ATGATGATGC GGCACAAACA GCAACTATTC	1320
GTCAACGAAA CGTCATTAAC GAAGGGGACC AAGTTGAGTT TTATGGTCCA GGTTCCTGTC	1380
ATTTTGAAAC CTATATTGAA GATTTCATG ATGCTAAAG CAATAAAATC GACCGCGCTC	1440
CAAATCCAAT GGAACATTG ACTATTAAAG TCCCACAACC TGTTCATCA GGAGACATGG	1500
TTTCGAGCTCT TAAAGAGGG CTTATCAATC TTTATAAGGA AGATGGAACC AGCGTCACAG	1560
TTTCGTGCTTA ATGTAGTTGT TTAGTTTTAA AAAACTATGC AAAGCTCCAT ATACAACACT	1620
TAAACGAGAT TAAAGAATGG CGAAATCCCT TGATGCGCAA GAGATTAGCT GTCTTTTTTA	1680
TTTTTTAAGT GATAAAGTCG GAGTTTAGGC ATCAAAGCCT ATCAAATTAA ACAAAGAAGC	1740
GATGTCTTAG ATATTTTGAA AAAAATTAAT AAGCAGAAAA CTCTCTATTA TTTTGTGTGA	1800
GAGAGTTTTT TGTTAATAAA ATTTACAAA ATGACATTTA TATATTGCAT TAAGTTAGAT	1860
ATATGATATA ATATTGTAA AAAGAGGCGC AACTTTTTAA AATTAATGAG AATCAAAGAG	1920
AAAACCAATA ATATTAATGG AGGAATAAAA AATGTAAGTA AGCATTATGG TCATTCAATC	1980
ATTCTCAAAG ATATAAATTT TGCACCTAAC AAGGGTGAAA TTGTTGGTCT AGCAGGGAGA	2040
AATGGAGTTG GTAAGAGTAC GTTGATGAAA ATTCTGTGTC AGAATAATCA ACCGACTTCA	2100
GGTAATATTA TAAGCAGTGA TAATGTTGGG TATTTAATCG AAGAACCAA ATTATTTTTA	2160
TCTAAACAG GTTTAGAGAA TTTAAATAT TTGTCAAAT TATATGGTGT TGA CTACAAT	2220
CAAGAAAGAT TTAGATGTTT GATCCAAGAG TTAGATTTGA CTCAGTCTAT TAATAAAAAA	2280
GTAAAGACCT ATTCTTTGGG TACAAAACAA AAATTAGCTT TGCTTCTAAC TCTCGTTACG	2340
GAACCTGATA TATTGATTTT AGATGAACCG ACTAATGGTT TAGATATTGA ATCATCACAA	2400
ATAGTTTTAG CGGTTCTAAA AAAATTAGCT TTACATGAAA ATGTGGGAAT TTTAATATCG	2460
AGTCATAAAT TAGAAGACAT TGAAGAAATT TGTGAGAGAG TTCTTTTCTT GGAGAACGGG	2520
CTTTTGACAT TTCAAAAAGT AGGAAAAGAT AGTCATAATT TCTTGTTTGA GATAGCTTTT	2580
TCATCAGCTA CAGATAGAGA CATTTTCATT ACCAAACAAG AATTTTGGGA TATTGTTTAG	2640
GAAGAGGGAT TGAGAATTAC TATGTCTGGG AATATTCAAA ATAGTGAGCT TTTTAAATTT	2700
TTTAACGAAA ACTCTATTAA AGTAGTTGAT TTTGAAACTA AAAAAGAGAC GCTTAAAGAT	2760
ATTTACCTAA ATCGTTCAAA ATAAAGGAAG GTTATAATCA TGAAATTAAA TAAACAGAAG	2820

1239

AATCGGATGA TTTACGTCTT GTCTAATTTT CTATATGCTA TCTCAGTTTC CATTATTTAT	2880
GCTTTGAATG GCATTGTGTT ACTAGTCATA GTAAGTAAAT TGGGTATTCC AGGTGATTTA	2940
GGATTAAATT TTATAGTAGC TATTGTAGTC AATACAATTT TGTTAGTCCT GTTTTATTTT	3000
CTATTATCTT ACATTTTCTA TTTATACAAA TTGAAAAGTG GCTTGGTATw TGGTATTTTA	3060
GTAGCTTTAC TACTCTTTAT CTCTAATATA TTAAATACGA TGATGATGAA TACTAGTAAT	3120
GATTGTTTA TCAAAGCAAT TGAA	3144

(2) INFORMATION FOR SEQ ID NO: 225:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3766 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 225:

TACGGTATTA TTTTAAAGGA GAAAGAATCA TGAAATCAA AAAATGGCTT GGTCTAGCAG	60
CCCTTGCTAC AGTCGCAGGT TTGGCTCTTG CAGCTGCGG AAATCAGAA AAGAAAGCAG	120
ACAATGCAAC AACTATCAAA ATCGCAACTG TTAACCGTAG CGGTCTGAA GAAAAACGTT	180
GGGACAAAAT CCAAGAATTG GTTAAAAAAG ACGGAATTAC CTTGGAATTT ACAGAGTTCA	240
CAGACTACTC ACAACCAAAC AAAGCAACTG CTGATGGCGA AGTAGATTG AACGCTTTCC	300
AACACTATAA CTTCTTGAAC AACTGGAACA AAGAAAACGG AAAAGACCTT GTAGCGATTG	360
CAGATACTTA CATCTCTCCA ATCCGCCTTT ACTCAGGTTT GAATGGAAGT GCCAACAAGT	420
ACACTAAAGT AGAAGACATC CCAGCAAACG GAGAAATCGC TGTACCGAAT GACGCTACAA	480
ACGAAAGCCG TGCCTTTTAT TTGCTTCAAT CAGCTGGCTT GATTAAATTG GATGTTTCTG	540
GAACTGCTCT TGCAACAGTT GCCAACATCA AAGAAAATCC AAAGAACTTG AAAATCACTG	600
AATTGGACGC TAGCCAAACA GCTCGTTCAT TGTCATCAGT TGACGCTGCC GTTGTAACA	660
ATACCTTCGT TACAGAAGCA AAATTGGACT ACAAGAAATC ACTTTTCAA GAACAAGCTG	720
ATGAAAATC AAAACAATGG TACAACATCA TTGTTGCAA AAAAGATTGG GAAACATCAC	780
CTAAGGCTGA TGCTATCAAG AAAGTAATCG CAGCTTACCA CACAGATGAC GTGAAAAAAG	840
TTATCGAAGA ATCATCAGAT GGTTTGGATC AACCAGTTTG GTAATAAGAA ACAGGGAGGT	900
GGGAGAGAAA ATTCCACCTC TTGCTTTTGT ATAGAGTATA GATTGTAAAG AAGACTATTC	960
GTTCATAGAA AGGTAGAGAG AATATGGTTT TTCCTAGCGA ACAAGAACAG ATTGAAAAAT	1020

1240

TTGAAAAGGA TCATGTAGCC CAGCATTATT TTGAGGTTTT GCGTACCTTG ATTTCTAAGA	1080
AATCAGTCTT TGCCCAGCAG GTTGGACTCA AGGAAGTCGC AAATTATCTG GGTGAGATTT	1140
TCAAGCGTGT TGGAGCTGAA GTGGAGATTG ATGAGAGCTA TACAGCGCCC TTTGTCATGG	1200
CACATTTCAA GAGTTCGCGT CCAGATGCCA AGACCTTGAT TTTCTATAAC CACTATGACA	1260
CTGTGCCAGC GGATGGGGAT CAGGTCTGGA CAGAGGATCC KTTTACGCTT TCGGTCCGCA	1320
ATGGCTTCAT GTATGGGCGT GGGGTGTATG ACGACAAGGG TCATATCACA GCTCGCTTGA	1380
GTGCTTTGAG AAAATATATG CAGCACCATG ATGATTTACC TGTCATATC AGCTTTATCA	1440
TGGAGGGAGC GGAGGAATCG GCTTCAACAG ACCTAGATAA GTATTTGGAA AAGCATGCAG	1500
ACAAACTCCG TGGGGCGGAT TTGTTGCTCT GGGAAACAAG GACCAAAAAT GCCTTGGAAC	1560
AGCTGGAAT TTCTGGTGGC AATAAGGGGA TTGTGACCTT TGATGCCAAG GTAAAAAGCG	1620
CTGATGTGGA TATCCACTCG AGTTATGGTG GTGTTGTGGA ATCAGCTCCT TGGTATCTCC	1680
TCCAAGCCTT ACAGTCTCTT CGTGCTGCGG ATGGCCGTAT CTTGGTTGAA GGCTTGACG	1740
AAGAAGTACA AGAGCCCAAT GAACGAGAAA TGGCCTTGCT AGAAACTTAT GGTCAACGAA	1800
ACCCAGAGGA AGTTAGTCGG ATTTATGGAT TGGAGTTGCC TCTCTTACAG GAGGAGCGGA	1860
TGGCCTTTCT AAAACGTTTC TTTTTCGATC CAGCGCTTAA TATCGAAGGA ATCCAGTCTG	1920
GTTATCAAGG TCAGGGTGTT AAGACTATTT TACCTGCAGA AGCCAGTGCC AAGCTAGAGG	1980
TTCGTCTGGT TCCGGGCCTA GAACCGCATG ATGTTCTGGA AAAAATTCGG AACAGCTAG	2040
ACAAAAATGG CTTTGATAAG GTAGAATTAT ACTATACCTT GGGAGAGATG AGCTATCGAA	2100
GCGATATGAG CGCACCAGCC ATTCTCAATG TGATCGAGTT GGCCAAGAAA TTCTATCCAC	2160
AGGGCGTTTC AGTCTTGCCG ACGACAGCGG GGACAGGACC TATGCATACG GTCTTTGATG	2220
CCCTAGAGGT ACCAATGGTT GCATTCCGTC TAGGAAATGC CAATAGCCGA GACCACGGTG	2280
GAGATGAAAA TGTGCGAATC GCTGATTATT ACACCCATAT CGAATTAGTA GAGGAGCTGA	2340
TTAGAAGCTA TGAGTAGAGA TATTATCAAG TTAGATCAGA TCGATGTGAC TTTTCACCAA	2400
AAGAAGAGAA CCATCACAGC GGTTAAGGAT GTGACCATTC ACATCCAAGA AGGGGATATC	2460
TACGGAATCG TTGGATATTC TGGAGCAGGA AAATCAACCC TTGTACGGGT GATTAATCTC	2520
TTGCAAAAAC CATCTGCAGG GAAAATTACC ATTGACGACG ATGTGATTTT TGACGGCAAG	2580
GTGACCTTGA CGGCAGAGCA GTTGCGTCGT AAACGTCAAG ATATCGGAAT GATTTTCCAG	2640
CATTTTAACC TGATGAGCCA AAAGACAGCA GAGGAGAATG TAGCCTTTGC CCTTAAACAC	2700
TCTGAACTCA GCAAGGAAGA AAAGAAGGCT AAAGTAGCTA AGTTGTTGGA CTTGGTTGGT	2760
TTGGCAGATC GTGCTGAAAA CTACCCTTCA CAACTATCTG GAGGGCAAAA ACAGCGTGTG	2820

1241

GCAATTGCCG	GTGCCTTGGC	CAATGATCCA	AAAATCTTGA	TTTCAGACGA	GTCAACTTCT	2880
GCCCTTGATC	CGAAGACAAC	CAAGCAGATT	TTGGCCTTGT	TGCAAGATTT	GAACCAAAAA	2940
TTAGGCTTGA	CTGTTGTCTT	GATTACGCAT	GAAATGCAGA	TTGTCAAAGA	CATTGCCAAC	3000
CGTGTTCAG	TTATGCAGGA	TGGGCATTG	ATTGAAGAGG	GTAGTGTGCT	TGAAATCTTC	3060
TCAAACCTTA	AACAACCTTT	GACTCAAGAC	TTTATCTCAA	CAGCTACAGG	TATTGACGAA	3120
GCCATGGTCA	AAATCGAGAA	GCAAGAAATC	GTGGAACACT	TGTCTGAAAA	CAGTCTCTTG	3180
GTGCAACTCA	AGTACGCTGG	AGCTTCAACA	GACGAGCCAC	TTTTGAATGA	ATTGTACAAG	3240
CATTACCAAG	TAATGGCTAA	TATTCTCTAT	GGGAATATCG	AAATTCTCGA	TGGTACTCCT	3300
GTTGGAGAAT	TGGTGGTGGT	TTTGTGAGGT	GAAAAAGCAG	CGTTGGCAGG	TGCCCCAAGAA	3360
GCCATTCGTC	AAGCAGGTGT	ACAACTAAAA	GTATTGAAGG	GAGTACAGTA	AGATGGAATC	3420
ATTGATTCAA	ACCTATTTAC	CAAATGTCTA	TAAGATGGGT	TGGGCTGGTC	AGGCAGGCTG	3480
GGGAACGGCT	ATCTACTTAA	CTCTTTATAT	GACAGTCTCT	TCCTTCATTA	TCGGAGGCTT	3540
CTTGGGGCTA	GTGGCAGGTC	TCTTTCTCGT	CTTGACAGCG	CCAGGTGGTG	TCTTGAGAA	3600
TAAAGTCGTA	TTCTGGATTT	TAGACAAAAT	TACCTCAATT	TTTCGTGCGG	TTCCCTTTAT	3660
CATCCTCTTG	GCAATCTTGT	CACCACTTTC	TCACTTGATT	GTTAAAACAA	GTATCGGGCC	3720
AAATGCAGCC	CTTGTCCCAC	TTTCTTTTGC	AGTCTTTGCC	TTCTGG		3766

(2) INFORMATION FOR SEQ ID NO: 226:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2520 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 226:

TGTTGCTGAG	TTAATCGGTA	CGTTCATGTT	TGTATTCGTC	GGGACAGGAG	CTGTTGTTTT	60
TGGAAATGGT	CTTGATGGCC	TTGGTCACCT	TGGAATCGCC	TTTGCCTTTG	GTTTGGCAAT	120
CGTGGTGGCA	GCCTACTCAA	TCGGAACTGT	TTCAGGTGCT	CACTTGAACC	CGGCTGTTTC	180
GATTGCTATG	TTTGTAACA	AACGTTTGTC	ATCTTCAGAA	CTTGTAACCT	ACATCCTTGG	240
TCAGGTGTTT	GGAGCTTTCA	TCGCTTCTGG	CGCTGTCTTC	TTCTCTTGG	CTAACTCAGG	300
TATGTCAACT	GCTAGTCTTG	GTGAAAATGC	CTTGGCAAAC	GGTGTCACTG	TCTTTGGTGG	360
TTTCTTGTTT	GAAGTCATCG	CAACTTCTTT	GTTTGTATTG	GTTATCATGA	CTGTGACTTC	420

1242

AGAAAGCAAG GGCAATGGCG CGATTGCTGG TTTGGTAATC GGTTCGTCAT TGATGGCGAT	480
GATTCTTGTC GGATTGAAGA TTA CTGGACT TTCAGTAAAC CCAGCTCGTA GCTTGGCACC	540
AGCTGTCTTG GTAGGCGGCG CAsCCTTCAA CAAGTTTGA TTTTCATCCT TGCACCAATC	600
GCTGGTGGAG TTCTTGCAGC CCTTGTGCA AAAAATTTCC TTGGAACAGA AGAATAATTG	660
AAACTCAAAA AGCCTTGCTC CTCATCTTGA GGAACAGGGC TTTTTCGTAT GATACTCTTC	720
GAAAATCTCT TCAAACCACG TCAGCTTCAT CTTGCCGTAG TATGGTTACT GACTTCGTCA	780
GTTCTATCCA CAACCTCAA ACAGTGTTTT GATCTGACTT CGTCAGTTCT ATCTGCAACC	840
TCAAAACAGT GTTTTAAGCT GACTTCGTCA GTTCTATCTG CAACCTCAA ACAGTGTTTT	900
AAGCTGACTT CGTCAGTTCT ATCTGCAACC TCAAAACAGT GTTTTAAGCT GACTTCGTCA	960
GTTCTATCTG CAACCTCAA ACAGTGTTTT AAGCTGACTT CGTCAGTTCT ATCCACAACC	1020
TCAAAACAGT GTTTTGATCT GACTTCGTCA GTTCTATCCA CAACCTCAA ACAGTGTTTT	1080
GATCTGACTT CGTCAGTTCT ATCCACAACC TCAAAACAGT GCTTTGAGCA AccTGCGGCT	1140
AACTTCCTAG TTTGCTCTTT GATTTTCATT GAGTATGACT TTAGCGGTG TCAATTTTCT	1200
CTGGATAAAG GTCGTGTTGG AAGAGGCGTT GTTCTGCCAA GCCCTCATAC TTAGTTCCCT	1260
GCTTACCGTA GTTGTAGTAG GGGTCGATTG AAATGCCACC GCGCGGAGTG AATTTTCCCC	1320
AGACTTCTAA ATAGCGAGGG TCTAGCAAGT TGACCAAGTC TTTCCCGATG GTGTTGATAC	1380
AGTTTTCGTG GAAATCTCCG TGGTTTCGGT AGCTAAATAG ATATAGTTTG AGGGATTTTG	1440
ACTCGACACA GAGCTTGTC GGAATGTAGG AAATATGAAT CGTCGCAAAG TCTGGCTGAG	1500
CAGTGATTG TCCCAGCAGA GACATATCGA GGATATGGTG ACGAATGCCC TGTTCCTTAG	1560
CGATTTCTCT AGTAATTTGA ATTTGAGGT GATGACGTTG GCCGTAGGCA AAGGTGACAG	1620
CTTCGACTGT TTCATAGTGT TGCATGACCC AGAAAAGGCA GGTGTTGAA TCTTGACCAC	1680
CACTAAAGAC GACCAAGGCT AATTGACGTT TCATAGTACT CCTTCCAAA TGGGAAATGT	1740
TCAGAGCACG CAAAAGCTC CCATTAGGGA GCTAAAAAAT ACCAAATCGA GGTTTTTTTA	1800
GCGATGGCAT ATCCCAAACA TCGTAATATT CTACTTATAT AGTAAAATGA AATAAGAACA	1860
GGACAAATCG ATCAGGACAG TCAAATCGAT TTCTAACAAT GTTTTAGAAG TAGAGGTGTA	1920
CTATTCTAGT TTCAATCTAC TATAGTCTAG CATATTTTTT GAAAAATGGC AAAGGGCAAG	1980
AAAAAAGAGA CCAAAGAAAG TACTTGGTCT CTCGTTTGAT TAGCTCAATT CAGCAATGAT	2040
GGCCTTGATT TGTTCGTCTG TGTGAACACC TGCAACTTGT TTGACAACTT GGCCGTCTTT	2100
TTTGAAGAGA AGAGTTGGAA TAGACATGAT TCCAAAAGCA CGAGCTGTGT TTGGATTTTC	2160
ATCAACGTCC ATTTTAACGA TTTTCAAGAC ATCTTCTGAA AGTTCTTCAG ACAATTTGTC	2220

1243

CAAGATTGGA CCTTGCATAC GACATGGACC ACACCAAGTT GCCCAGAAGT CTAATAAGAC	2280
CAAACCGTCT TTTGTTTCTT GTTCGAATGT TGCATCTGTA ATTGCTTTTG CCATTGTATT	2340
TCTCCTTTTT TTAGTTATAT TGGCTTAAAT CTGTTTCAT GAGATAGAAG AAGATATCTC	2400
CATAAGTCCC ATGGTAGTCC AAATTATGAC CCTTGTAAGT TAATTTTGG ACAGGGTAGT	2460
AkkCTGCGAC GCCGATAAGG CAAGCTTGTT GCGAACGTTT AAAGTCTTCA TAAGACTCGG	2520

(2) INFORMATION FOR SEQ ID NO: 227:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 5278 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 227:

ACTCAGTTAG ATTTTGT TTTT CAAAAACAAC GAAGAAAAAG ACCATGTTGC TCTACTTGGA	60
AGAATTGGCT CCGAACGTGT TTATCGATAT ATTAATAAAA AATATTTAGA TTTACCGGAA	120
ACATTCGAAA ATTATAATGT TTTGTACCA GAAGCTAATG GAAGTGGTGC CTTAGGTGAA	180
GTCTTATCAA CACCCCTAAT CGGGGAACCC CTAATCGGGC ATACAGATAC TTTTATCT	240
ATTGGTAATT TTAACAACA ATTTGAAGCC GATGCTTGTA TTAAATTTAT TAAACTAAA	300
TTCGCTAGAG TATTATTAGG TGTTTTGAAA GTTACTCAGC ATAATTCACG CAAAATTGG	360
TATTACGTCC CCCTCCAAGA CTTTACGGTC AATTCGGACA TTGATTGGAC ACAATCAGTG	420
ACTGATATTG ACCGCCAGCT TGATCAAAAA TATGACTTTT CCCCTGAAGA AATTGCCTTT	480
ATTGAGAATC ATGTAAGGGA GATGGATTAG AAAAGTATTT TTATTTGACA AATAGTGCTC	540
AATGATCTAA AATGACTATA TAGGATTAGG TCAGGAAGCA TACGATGCCC TGACCCTTT	600
TGTACTTATG AGATGAGAAA GTCATTTGTT AGATAAATTG ACTCGTTAGC AAACGTTCAA	660
AAAAGGAAAA CTTATGCCAG TAGAAATTA AACCCTAAA GAAATTCATC CTAAATCTA	720
TGCCTACACC ACACCGACAG TAACCAAGTAA TGAAGGCTGG ATTAAGATTG GGTATACAGA	780
ACGTGATGTC ACACAACGTA TCAAGGAGCA AACGCATACA GTCATATAG CTACAGATGT	840
CTTATGGACT GGTGATGCAG CTTATACAGA AGAGCCTGAT AAGGGGAAAA CTTTCAAGGA	900
CCATGATTTT CACCATTTC TTTCTTTCCA TGATGTAGAA CGTCGTCCCA AGACGGAATG	960
GTTCTATTTT AATGGAATC CTGAAAAATC AAAAAATCTT TTTGATAAGT TTGTTTCAAGCA	1020
TGATTTGTCT GGTATCAGC CTGAAAAAGG ACAGGACTAT ACTCTGCGAC AAGAGCAAGA	1080

1244

AGAAGCAGTT GCTAAGACAT TAGCTTATTT CCAAGAACAT GCTGGAGGCA AGTTTCTCTG	1140
GAATGCCAAG CCACGCTTTG GTAAAACCTT GTCTACCTAT GACCTAGCTC GACGGATGGA	1200
AGCTGTCAAT GTCCTAATTG TAACAAACCG CCCTGCCATT GCTAACTCAT GGTATGATGA	1260
TTTGTAAACA TTCATAGCAG GTCAAACGAC TTACAAGTTT GTTTCTGAAT CAGATAGCCT	1320
TAAGAGTCGT CCAATCTTGT CACGACAAGA ATTTCTTGGT ATTTTAGCTG ACGATGTAAG	1380
ACAACTTGCT TTTATCAGTC TCCAAGACTT GAAAGGATCT GTTTATTTAG GTGGAGAGCA	1440
CGATAAACTC AAATGGGTAA CTGATCTGCA TTGGGACTTG TTGGTTATTG ACGAGGCTCA	1500
TGAAGGAGTT GATACCTTCA AGACTGACCA AGCCTTTAAT AAGATTCGAC GAAATTTTAC	1560
TCTGCATTTG TCAGGTACAT CATTTAAAGC ATTGGCTAAA GGAGATTTTA CAGAGGAACA	1620
AATCTACAAC TGGTCTTATG CTGATGAGCA GGCTGCTAAG TATTCGTGGT CTCTTGAGCA	1680
AGAAGAGGAA AATCCTTATG AAAGCTTGCC TCAGTTGAAT CTCTTTACCT ATCAAATGTC	1740
TCAGATGATT GGCGAAAAGT TAGAAAAAGG CGCTCAGATC GATGGTGAAA ATATTGACTA	1800
TGTTTTTGAC TTAAGTGAAT TTTTCGCTAC AGATGATAAA GGGAAATTTA TTCATGAGCA	1860
TGATGTCAGA AATTGGTTAG ATACTCTATC AAGCAATGAA AAATATCCAT TTTCAACCAA	1920
AGAACTCCGT AATGAACTCA AGCATACTTT TTGGCTTTTA GAACGTGTCTG CTTCGGCCAA	1980
AGCATTAATA GCCCTACTAG AAGAACACCC AATCTATGAA AACTATGAGA TCGTTCTAGC	2040
TGCTGGTGAC GGACGTATGT CCGAAGAAGA CGATAAAGTC AAATCAAAT CCTTGGACTT	2100
GGTTAGAAAA GCGATAGCAG AGAATGACAA AACCATTACC CTATCCGTTG GTCAGCTGAC	2160
GACAGGTGTC ACTATCCCTG AATGGACAGG TGTATTGATG TTATCAAATT TGAAATCACC	2220
AGCTCTTTAT ATGCAGGCCG CCTTCCGTGC TCAAAATCCT TACTCATGGA GCGATAACAA	2280
AGGAAATCAC TTTCGCAAAG AAAGAGCCTA TGTATTTGAC TTTGCGCCGG AAAGAACCTT	2340
GATTCTCTTT GATGAGTTTG CCAACAACCTT ATTGCTTGTA ACTGCAGCTG GTAGAGGAAC	2400
TTCAGCTACA CGCGAAGAAA ATATTAGAGA ATTATTAAAC TTCTTTCCAA TTATTGCCGA	2460
AGACCGTGCT GGTAAGATGG TTGAAATTGA TGCAAAGGCA GTTCTAACCA CTCCTCGCCA	2520
GATAAAAGCT AGAGAAGTTC TTAAACGAGG TTTTATGTCC AATCTCTTAT TTGATAATAT	2580
TAGTGGTATT TTCCAAGCAA GTCAAACAGT TTTAGATATT TTAAATGAGC TGCCAGTTGA	2640
AAAGGAAGGG AAGGTACAAG ATAGTTCTGA TTTATTAGAT TTTTCAGATG TTACAGTCGA	2700
TGATGAGGGA AATGCAGTAG TAGACCATGA AATTGTAGTT AATCAGCAAA TGCGACTTTT	2760
TGGTGAAAAA GTTTATGGAC TTGGTGAATC TGTGCTGAG TTAGTCACAA AAGATGAGGA	2820
ACGAACTCAA AAACAGCTGG TCAATGACTT GAGTAAGACC GTTCTTCAG TGATTGTAGA	2880

1245

GGAATTGAAA GCAGATTATT CTCTAAAAAC AAGGGAAACT GAGCAAATTA AGAAACAAAT	2940
TACAGCAACA CTTGAGAATG AAATTCGAAA AAATGATATC GAAAGAAAAA TTTCTGAAGC	3000
TCATATCAAG CAAGAGTTGC AACAGCAGCT CAAAGAAGCA AATGATAAAG CGCAAAAAGA	3060
TAAGATTCAA GAAGATTGG AAAACGTTT AGAAGAAAAT AAATCATTTC ATAAAGAAAA	3120
ACTAGAACAA ACACTCAAAA AAGAAGTGGA AAAATGCCT GAGAAATTTA TCGAACAGGT	3180
TGAGATAAAA CGTGTGGAAC AGTTGAAACA ATCAGCTCAA GATGAAATTC GTGACCATTT	3240
ACGAGGGTTT GCAAGAACAA TTCCAAGTTT TATTATGGCT TACGGTGATC AAATCTAAC	3300
ACTTGATAAT TTTGATGCCT TTGTTCTGA ACATGTTTTT TATGAAGTAA CAGGGATTAC	3360
GATTGATCAG TTTAGATATT TGCGAGATGG TGGGCAGGAT TTTGCAGGGC ATCTCTTTGA	3420
TAAAGCAACA TTTGACGAAG CTATTCAAGA ATTTCTTCGC AAGAAAAAGG AGTTGGCGGA	3480
TTATTTTAAA GATCAAAAAG AAGACATTTT TGAATATATT CCACCGCAGA AGACCAACCA	3540
AATTTTCACT CCTAACGAG TGGTGAAAAG GATGGTAGAT GATTTGGAAA AGGAAAATCC	3600
AGGGATTTTT GATGATCCAT CTAAGACTTT TATTGATTTA TATATGAAGT CAGGCCTCTA	3660
TATTGCAGAA CTTGTGAAGC GGTATATATA TAGCAATGGC TTGAAAGAGG CCTTTCAAA	3720
TCCTGAAGAA CGCTTAAAC ATATTTTGA AAAGCAAGT TATGGATTTG CTCCGTCTGA	3780
GATTATCTAT AACATTTCCA CTAATTTTAT ATTTGGCAAT CTTTCTAAAG ATATCAGTAG	3840
GAAGAATTTT GTTTTAGCAG ATACCATTCC AGCGGCTAAA GAAGGGAGCA TTCAAAAGTT	3900
GGTTGATTCC TATTTTGAAA ATAATTAAAA AGAAGGCCGA GTCAAAATTC TTTGAAATCA	3960
GAAAAACGC ATAATATTGA GTGCTTTTGT ACTGCCCCC AAAAGTTAGA CAGAAAAAT	4020
CTAACTTTTG GGGGGCAGTT CAGACAATCC TTGGTATTAT GCGTTTTATT GTGGGAAGAT	4080
GTATAATGGA TTGAAATAAG ATATGAACAA ATCAATTAGG AATTTAAAGC ATTTTATAAC	4140
AACGTTTTAG AGTAATGGG GGCTATTTCA ACTTCAACCT ACTATAATAC AGAAAAAAC	4200
AACTCCCTGA TAATTCAAGG AGTTGTCTAT AGTTAAATTA GTTTTGTAGAA GCTTCTTGGA	4260
ATTCTGGGTT TTTCCATGCT TCGTCAATGA TAGCTTGTA TTTCTTAGCA GATGCTTGCA	4320
TTTTTTGAGT TTCTGCGTCG TTCAATGGGA TATTTACTGG ACGAACGATA CCATGTGCAC	4380
CAACAACAGC TGGTTGACCG ATAAAGACAT TCTCAACTCC GTATTGACCT TCTTGAATA	4440
CTGAAAGTGG AAGTACTGCG TTTTCATCGT CAAGGATTGC TTTAGTGATA CGAGCAAGGG	4500
CTACTGCGAT ACCGTAGTAT GTTGACCTT TTTGTTGAT GATTGTGTAG GCTGCATCAC	4560
GAACACCTTC GAACAATTCA ATCAATTCAG CTTCTTGAAC ATTTTGAGTG TCTTTAAGGA	4620

1246

ATTCTTCAAG GTTTACACCA GCGATGTTAG CGTGTGACCA AACAGCGAAC TCAGAGTCAC	4680
CGTGTTCACC CATGATGTAG GCGTGCACTG AACGAGCATC CACATCCAAT TTTTCAGCAA	4740
GTGCTTGACG GAAACGAGCT GAGTCAAGTG AAGTACCTGA ACCGATAACG CGTTCTTTAG	4800
GGAAACCAGA GAATTTCCAA GTTGAGTAAG TCAAAACGTC AACTGGGTTA GCAGCAACAA	4860
GGAAGATACC TTTGAAACCA GATTCAACAA CTTGAGTTAC GATTGATTTG TTGATAGCAA	4920
GGTTTTTACC TACAAGGTCA AGACGAGTTT CACCTGGTTT TTGAGGTGCA CCTGCAGTGA	4980
TCACAACAAG GTCAGCGTCT GCACAGTCAG AGTATTGAGC TGCATAGATT TTTTATAGGTG	5040
AAGTGAAGGC AAGGGCGTGA CTAAGGTCAA GCGCATCACC AACAGCTTTT TCATGCAATT	5100
GTGGAATTTC GATAATTCCA AGCTCTTGTG CAATTCCTTG GTTAACAAGT GCAAAAGCGT	5160
AAGATGAACC TACAGCACCA TCACCGACAA GGATAACTTT TTTGTGTTGT TTAGTTGAAG	5220
TCATTGTTTT AAACATCTCC TTAATTTTAT TAGGGGATTT TCCCTAGACA ACTTCATT	5278

(2) INFORMATION FOR SEQ ID NO: 228:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1941 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 228:

ATAAGGAATC TCTAAAAAT TTAAAGGAGA ATCTAGCAAA TGGATTTTAC ATGGGCACTG	60
AAGTATGCCA CTGAATTTTT GGGAACTGCC ATTTTGATCA TTCTTGGGAA TGGTGCAATT	120
GCCAACGTTG AACTTAAAGG TACGAAAGGT CACCAAAGTG GCTGGATCGT CATCGCTGTT	180
GGTTATGGTA TGGGGGTAT GATCCAGCC TTGATGTTTG GTAACGTATC TGGGAATCAC	240
ATCAACCCCTG CTTTCACTCT AGGGCTTGCA GTTAGCGGTC TTTTCCCTTG GGCACAAGTG	300
GTACCTTACA TTATCGCGCA AGTCTTGGGG GCTATCTTTG GCCAAGCCTT AGTTGTGGCA	360
ACATACCGTC CATTTCTACTT GAAAAC TGAA AACCCAAATA ACATCTTGGG AACTTTCTCA	420
ACTATTTCAA GTATTGACCA TGGTACAAAA GAAAGTCGCT ATGCAGCAAC TGTCATGGT	480
TTGATTAATG AGTTTGTGG TTCAATTGTT TTGTTCTTTG CAGCTCTTGG TTTGACTAAA	540
AACCTCTTTG GTGCTGAAGT GCTTCAATTC ATGAAACAAA AGGCAACAGA AGCAGGACAA	600
ACAGTTGATT TTTCTGACTT GGCTATTAAA GCACAGGTGG CTCCACACAC TGCTTCAGGA	660
CTTTCTGTGG CTCACTTGGC ACTTGGATTC CTCGTTATGG CTTTGGTAAC ATCACTTGGG	720
GGACCTACAG GACCTGCCTT GAACCCAGCC CGTGACTTGG GACCACGTCT CCTTCATGCT	780

1247

TTCCTTCCCA AATCAGTTCT TGGTGAGCAT AAAGGCGATT CAAAATGGTG GTATTCTTGG	840
GTACCACTAG TAGCACCTAT CGCAGCAGCA ATTGCGGCAG TAGCTGTATT CAAATTCCTT	900
TATCTCTAAG AAATAGCTCC TTTAACATTT GAGTGAGCAC CATCTATAAG TAAGAGAGGA	960
TCAGACTGGk TCTCTCTTTT kGATTTTtaG GGAAATGAAA GAAcTCTAAA CAAACTCCTC	1020
TCCAGCAGTG GTTTAGAAGT CTCAGTGGGC TATTCCAGCT TCAATGGACT ATAGTAGGTT	1080
GCAGTTGAAA TAATAGACCC TTGTTTCTAA AACATTGTGA GAAATTGGTT TGAATCTCC	1140
AATCAAATTG TGCAGTTTTC ATTCTACTAT ATATTATCGG AATATTATCG GAGATGGGTT	1200
CCCTATCTTG TAAGTCTGCT TTATAGTGGG TTGAAGTTGG AATAGTCCTC CCTTCTTTCT	1260
CAAACATTGT GAGGAATTGA TTTACCTTCC TCAACAAAAT GTTCAGTTTC TATTTTCATTT	1320
TACTATAAAA TAAGCGATTA GGGGGGCTAT TCTTCGACCT ACATTGACTC TGCTGAGTCC	1380
TATGATTGTT ATCGTTTTAT CTGCAATTTT ATACTCAATG AAAATCAAAG GGCAAACATA	1440
GAAGCTAGCC GCAGGTGTT CAAAACACAG TTTTGAGGTT GTATAGTAGA TTGAAACTAG	1500
AATAGTACAC ATCTACTTCT AAAACATTGT TAGAAATCGA TTTGACTGTC CTGAACGATT	1560
TGCCCTATTC TTGTTTCATT TTACTATATA AACCAGAGAC TGTTTACATT TTCAGCAAGT	1620
GAGTGGATGG ATAATGCTGA AAACCTCTTG AAGGATAAGT CTATTTAGTA CTTTCTATTA	1680
ATTAGTTAAA TTTTACCACAA GAATAATTCA CAAAACGTT GTAAAACACT TGCAATTTAG	1740
CTGAAATTTG ATAAATAGT AAGGAAAGTT AGACTGTATT GCCTACTGTC TATCTATAAA	1800
ATATATTTTA TTGGAGGCTT TTACTCAAAT GGCAAAAGAA AAATACGATC GTAGTAAACC	1860
ACACGTAAAC ATTGGTACTA TCGGACACGT TGACCACGGT AAAACTACCC TAACTGCAGC	1920
TATCACAACCT GTTTTGGCAC G	1941

(2) INFORMATION FOR SEQ ID NO: 229:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 755 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 229:

ATTTGAAGAA ATTGAAGAAA TCGTAGCCCC TACAGATGGT GAATTTTGG GGGAAAGTTTT	60
ACTTGGAACCT GGGGTAGTTC TCTTAATTGG AGTAGCCTGT TGTTAAAAAG ATAGGGAGTG	120
ATAATCATGC AAGATAACTT TTTATTTGAG GAAATTGAAG AAATTTTCAGT ACCAGTTAAT	180

1248

GATTTTTCAG CTGGACTTGC AACAGGTATC GGATTGGTT TAGCAATCCT TGCTCTTGCT	240
GGTTGTTGAA GTTTGTTTCAT TTACTAACAT CAAGCTTTTT CAATTTTCATT TTAGACAGTC	300
ATTTAAATTT TCCGTATTAG TCTTGCAGCA AGAGATTAAT AGAATTAGTC ATTATTTTAT	360
TGATTGCGGA CTGAGGGACT AGAGTATGTT TTAAGATATT ACCTACTCCT TATGAGGGAC	420
TTAGGTTTGT TATGAGAATT GTTGATAAGA TTAAGATATT ACCTACTCCT TATGAGGGAC	480
ACTATCATTT ATATATACCA TCCAGTAAGA AACATGTATT AGTTGGGAAA CAGGAAAAAA	540
ATGGTTAGAG CAACTAATAG GTCAAGAATT TACCATATCG GACTTATTAG TGTTAGTAGG	600
GAAGAAATAT TTTTAAAATA TCTTGGGACT TTAATATAAC ATTATCTGAA AAATTAAACT	660
ATAAAGATT TAATAAGAAT TTTGAAAAAA TCCTATCTTG TTGTCATTAT ATTTGCAACG	720
ATACATGAAA TTAGTCATGC AATAATTGCT AATAA	755

(2) INFORMATION FOR SEQ ID NO: 230:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1483 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 230:

CCAGAAAAAC CGTAGTGGAG CTCGTGGAAC AGTGGAATTG ATTTTCCAAA AAGAATACAA	60
TAAATTTTCA AGTATCTCAA AGAGGGAGGC ATAAGATGTC AGATGCATTT ACAGATGTAG	120
CCAAGATGAA AAAAATCAAA GAAGAAATCA AGGCACATGA GGGACAAGTC GTAGAAATGA	180
CTTTGGAGAA TGGTCGTAAG CGCCAAAAAA ATAGATTGGG TAAGCTAATT GAAGTTTATC	240
CATCTCTATT TATTGTGGAG TTTGGGGATG TGGAAGGAGA TAAACAAGTT AATGTTTACG	300
TTGAATCCTT TACTTACTCA GATATTCTTA CAGAAAAGAA TTTGATTCAT TATCTTGACT	360
AAAGTGAGAA ATTTTCTCAC TTTTCTTTT TTCTCCGAAT AATTTAGGTG AAGGCAATCA	420
TCGCTTTATA TTATTTTTCAG AGGAGGAAGA ATGAAAATTT TACCGTTTAT AGCAAGAGGA	480
ACAAGTTATT ACTTGAAGAT GTCAGTTAAA AAGCTTGTTT CTTTTTTAGT AGTAGGATTG	540
ATGCTAGCAG CTGGTGATAG TGTCTATGCC TATTCCAGAG GAAATGGATC GATTGCGCGT	600
GGGGATGATT ATCCTGCTTA TTATAAAAAT GGGAGCCAGG AGATTGATCA GTGGCGCATG	660
TATTCTCGTC AGTGTACTTC TTTTGTAGCC TTTCGTTTGA GTAATGTCAA TGGTTTGTAA	720
ATTCCGGCAG CTTATGGAAG TGCGAATGAA TGGGGACATC GTGCTCGTCG GGAAGGTTAT	780
CGTGTAGATA ATACACCGAC GATTGGTTCC ATTACTTGGT CTAATGCAGG AACTTATGGT	840

1249

CATGTTGCCT GGGTGTCAAA TGTAATGGGA GATCAGATTG AGATTGAGGA ATATAACTAT	900
GGTTATACAG AATCCTATAA TAAACGAGTT ATAAAAGCAA ACACGATGAC AGGATTTATT	960
CATTTTAAAG ATTTGGATGG TGGCAGTGTT GGAATAGTC AATCCTCAAC TTCAACAGGC	1020
GGAACTCATT ATTTTAAGAC CAAGTCTGCT ATTAAACTG AACCTCTAGC TAGCGGAACT	1080
GTGATTGATT ACTATTATCC TGGGGAGAAG GTTCATTATG ATCAGATACT TGAAAAAGAC	1140
GGCTATAAGT GGTGAGTTA TACTGCCTAT AATGGAAGCT ATCGTTATGT TCAATTGGAG	1200
GCTGTGAATA AAAATCCTCT AGGTAATCTT GTTCTTTCTT CAACAGGTGG AACTCATTAT	1260
TTTAAGACCA AGTCTGCTAT CAAACTGAA CCCCTAGTTA GTGCAACTGT GATTGATTAC	1320
TATTATCCTG GAGAGAAGGT TCATTATGAT CAAATTCTCG AAAAAGACGG CTACAAGTGG	1380
TTGAGTTATA CGGCTTATAA CGGAAGTCGT CGCTATATAC AGCTAGAGGG AGTGACTTCT	1440
TCACAAAATT ATCAGAATCA ATCAGGAAAC ATCTCTAGCT ATG	1483

(2) INFORMATION FOR SEQ ID NO: 231:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1027 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 231:

CCCGGAAAAC AAGTTAAAGT TGAAGTTGGT CAAGCAGTTT ACGTTGAAAA ATTGAACGTT	60
GAAGCTGGTC AAGAAGTTAC TTTTAACGAA TTGTTCTTGT TGGTGGTGAA AACACTGTTG	120
TCGGAACTCC ACTTGTGCT GGAGCTACTG TAGTTGGAAC TGTTGAAAA CAAGGAAAAC	180
AAAAGAAAGT GGTACTTAC AAGTACAAAC CTAAAAAAGG TAGCCACCGT AAACAAGGTC	240
ACCGTCAACC ATATACAAAA GTTGTCATCA ACGCAATCAA CGCTTAATTT TAAGGAGAAC	300
ACATGATACA GGCAGTCTTT GAGAGAGCCG AAGATGGCGA GCTGAGGAGT GCGGAAATTA	360
CTGGACACGC CGAGAGTGGC GAATACGGCT TAGATGTCGT GTGTGCATCG GTTTCTACGC	420
TTGCCATTAA CTTTATCAAT TCTATTGAGA AATTTCAGG CTATGAACCA ATCCTAGAAT	480
TAAACGAAGA TGAAGGTGGC TATCTGATGG TTGAAATACC AAAAGATCTT CCTTCACACC	540
AGAGAGAAAT GACCCAGTTA TTCTTTGAAT CATTTTCTT AGGTATGGCA AACTTATCGG	600
AGAACTATTC TGAGTTCGTC CAAACCAGAG TTATCACAGA AACTAACAC GGAGGAAAAC	660
ATTATGTTAA AAATGACTCT TAACAACTTG CAACTTTTCG CCCACAAAA AGGTGGAGGT	720

1250

TCTACATCAA ACGGACGTGA TTCACAAGCA AAACGTCTTG GAGCTAAAGC AGCTGACGGA	780
CAAACGTAA CAGGTGGATC AATCCTTTAC CGTCAACGTG GTACACACAT CTATCCAGGT	840
GTAAACGTTG GTCGTGGTGG AGATGATACT TTGTTGCTA AAGTTGAAGG CGTAGTACGC	900
TTTGAACGTA AAGGACGCGA TAAAAACAA GTGTCTGTTT ACCCAATCGC TAAATAAAAA	960
GGTCCATTGA ACCTTTTATC CCGAACCTTG AAATGTAGAG GTGAGGAAGC TAGAAACAGC	1020
TTAAAAAT	1027

(2) INFORMATION FOR SEQ ID NO: 232:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1990 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 232:

CGGTTCAAAT GGTGCAGGTA AATCTACGTT AATTAATTCT ATTGTAGGTT TTCAAGAGAT	60
TTATTTAGGA GAAATAGAGT ATTGTGATAA AGATTGATA GTTAGTTCTC AACCTTTTGC	120
TCATTTAGGC TTTACTCCTC AAACCACAGT AATTGATTTT TATACTACTG TGAAGGACAA	180
TGTAATATTG GGGCTGAACC TTGCTGGAAA GTTTGGGAAA AATGCTGAGA AGTTGTGTCA	240
AATAGCCTTA GAAATTGTTG GGTTAGCTGA TAAAAAAAT AATTGGTAG AACATTGTC	300
AGGTGGACAA CTGCAACGCG TCCAGATTGC TAGAGCAATA GCTCATAATC CAGATTTTGA	360
TATTTTAGAT GAACCTACCG TTGGTTTAGA TACTGAATCT GCCGAAAAAT TTTTAATGTA	420
TTTAAAAGAT AAGAGTTTGG AAGGAAAAAC TATTATCATA TCTTCACATG ACATAAATCT	480
ACTCGAAAAG TTTTGTAATA AAATACTTTT TTACAAAAT GGCTCCATAT CATTTTTTGG	540
TGATATGCGT GACTTTGTAG ATAATTCAAC TATCAAATTA AATTTTCAA TGCAGAATAG	600
AATTTCTAGA TATCAAATTG AATTTTAGA AAATTTAGA TTTAAAGTTC ACATCGAAGA	660
TAATGATAGT TTTACAATAG AAGTCCCTAT AGAAGAAAAG ATCTTAGATG TTATCAATGA	720
GGTAGGAAAA GCATGTGAAA TAAAAACTT TTCAACAAGT AAATTAACCT TACAAGAAAG	780
TTATTTGCAA AGAATAGGAG GAGAAAAATG AAGGCTGATC AATTAAGGCA CAAATCGGAC	840
TTAGGTTTAA GAGGTCTAGC GATTATTGCT AAAAATGAGA TTATTGCTTT TTTTAGAAGT	900
AAAGGTTTAA TTATTTCTCA GTTTCTACAA CCAATCTTAT ATGTTGTTTT TATAATAATA	960
GGATTAAATT CTTGATAAAA GAACATTCAG TTTAATGATA TAAAAACCTC TTATGCAGAA	1020
TATACAATCA TTGGTGTTAT AGCTTTATTG ATAATCGGGC AGATGACTCA AGTTATTTAT	1080

1251

AGGGTGACAA TAGATAAAAA ATATGGGCTA CTTGCTCTTA AGTTATGCAG TGGAGTTCGT	1140
CCTTTATATT ATATTTTAGG GATGAGTATC TATCTATAT TAGGGTTGAT ACTTCAAGAA	1200
ATTATTATAT ATATAATTAC GTTAGCGTTT GAGATAAATA TCGCAATGGA TAGATTTTTT	1260
TATACAGTTT TGTTATCTAT TGTGTTTTTA TTATTTTGGG ACTCCCTTGC AATTTTACTT	1320
ACAATGTTTA TCAATGATTA CAGAAGACGT GATATTGTAA TACGTTTGT ACTAACACCG	1380
CTTGGTTTTA CAGCTCCTGT TTTCTACTTA ATAGATTCTG CTCCTAGTAT TGTGAGATGG	1440
ATTGGTCAGT TAAATCCCTT AACTTATCAA TTAATATTT TGAGAACTT TTATTTTAAA	1500
AATTCAACAA CTTTGAATT AGTTTTCTTA TTGTTAACAT CATTACTTGT CCTTATATCT	1560
GTATCTTTTA TTATACCAAA GATAAAATTG ATACTGATAG AAAGATAAAA GTTGGGTCAT	1620
CCAACTTTTT TGTGTCTCTC CGAAAACCAC TAGCTATGCT AGTGGTTCCA TAGAGCTTTT	1680
AGCGTGGTAA CAAAAGAAC CTCCTAAAT GATAAGATAG AAGTGGTTC TCCGCCACTA	1740
CAACATATCA TACAGGAGGT ACCTCATGAG AGAGGATAAT CAAAGTTTAT CACATACCAC	1800
ATGGAATTGT AAATATCATA TTGTTTTTGC ACCCAAATAT CGTCGTCAA TCATTTATGG	1860
CAGATACAAA GCTAGTATCG GAAGAATCAT ACGTGACTTA TGTGAGCGTA AGGGTGTAA	1920
AATCCATGAA GCGAATGCTT GTTCAGACCA TATTCACATG CTTATCAGTA TTCCTCCGAA	1980
ACTTAGTGTT	1990

(2) INFORMATION FOR SEQ ID NO: 233:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 4766 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 233:

GAACTATATT GCATATATTT CTAGCAATGA TCATGGCGAA TCTTGGTCTG CACCAACTTT	60
ATTACCTCCT ATAATGGGAC TTAATCGGAA TCGCCATAT TTAGGTCTG GACGTGGAAT	120
CATTGAAAGC TCAACTGGAC GTATTCTTAT TCCGTCTTAC ACTGGTAAAG AGTCTGCGTT	180
CATTTATAGT GACGATAATG GAGCATCTTG GAAAGTTAAA GTAGTGCCAC TTCCTCTAG	240
TTGGTCAGCA GAAGCACAAT TTGTAGAATT GAGTCCAGGA GTAATTCAAG CATATATGCG	300
TACAAATAAT GGTAATTTG CATATTTAAC AAGTAAAGAC GCAGGTACTA CTTGGAGTGC	360
ACCGGAATAT TTGAAATTTG TTTCAAATCC AAGTTATGGA ACACAATTAT CAATCATCAA	420

1252

TTATAGCCAA TTGATTGATG GTAAAAAGGC TGTCAATTTTA AGTACTCCAA ACTCCACAAA	480
TGGTCGTAAA CACGGACAAA TTTGGATTGG TCTAATTAAT GATGATAATA CAATTGATTG	540
GCGTTATCAT CACGACGTTG ATTATAGTAA CTATGGATAC TCATATTCAA CATTGACAGA	600
GTTACCAAAT CATGAAATTG GATTGATGTT TGAAAAATTT GATTCATGGT CTCGTAATGA	660
ACTTCATATG AAAAATGTTG TACCATATAT AACATTTAAG ATTGAAGATC TGAAAAAGAA	720
TTAAAGCTGA AATTTGAAAA TATATAAAAA GAGGATAAAA ATTATGGTAA ATTACGGTAT	780
TGTTGGAGCT GGATATTTTG GAGCTGATTT AGCTCGCTCA ATGAACAAAA TTGAAGATGC	840
AAAAGTGGTT GCGGTATTTG ACCCAAATCA TGGAGAAGAA GTTGCTCAAG AGTTGGGATC	900
AGATGTTTGT GCAAGTTTAG ATGAAGTTGT AGCACGTGAA GATATTGATT GTGTGATCGT	960
AGCTTCACCT AGCTACCTTC ACCGTGAACC AGTTGTGAAA GCTGCTCAAC ATGGCAAACA	1020
CGTATTTTGT GAAAAGCCAA TTGCATTGTC TTATGAAGAT TGTAAGGCCA TGGTTGACGC	1080
ATGTAAAGAA AATAATGTCA TCTTTATGGC TGGTCACATC ATGAAGTTCT TTAACGGTGT	1140
ACACCATGCT AAAGAATTGA TTACTCAAGG TAAAATCGGT AAAGTCTTTT ATTGCCATGC	1200
TGCTCGTACA GGTGGGAAG AACACAACC AACTGTATCA TGGAAGAAAC TTCGTTCTCA	1260
ATCTGGAGGA CATTTGTACC ACCATATTCA TGAATTAGAT TGCATTCAGT TTATCATGGG	1320
AGGACTTCCT GAAAAAGCGA CAATGGTAGG AGGCAATGTA TATCATAAAG GTGAAAACTT	1380
TGGTGATGAA GATGATATGC TCATTGTAAA CTTAGAATAC TCTGATGATC GTTATGCTGT	1440
TTTGGAAATAT GGTAATGCTT TCCGTTGGGG TGAACACTAC GTCTTGATTG AAGGAACTGA	1500
AGGAGCTATC AAAGTTGACT TGTTCATAC TGGCGGTACT CTTCGTGTTA AAGGTGAAGG	1560
AGAATCACAC TTCTTAGTTC ATGAACTCA AGAGGAAGAT GATGATCGTA CAGCTATCTA	1620
TACCGGTCGT GGTATGGATG GAGCAATTGC GTACGGTAAA CCAGGAGTAC GTTGCCCATT	1680
ATGGTTGCAA ACATGTATTG ATAAAGAAAT GGAATATCTA CATGACATCA TTAAAGGTGG	1740
AGAAATTACA GAAGAATTG AAAAAGTTCT CAATGGTGTA GCTGCTTTAG AATCAATCGC	1800
TACCGCTGAT GCATGTACTT TATCAGTTAA AGAAGATCGA AAAGTAAGTC TTTAGAAAT	1860
CACAAATGCT TAACTTTTGT AAAACAGAAT AGTAAATTCT TGTCAATATA TAATTTCTAA	1920
AGTTCTGTGA TACAACTCAT TGAATAAAGA AATAGAGATG GGAAGTGGAT AATGCCCAGT	1980
CCCATTTTTT ATCAAAAAGT AATGAGATCA AAAATGTGGG AGTGTGAAA TGAAGATTAT	2040
AGGTATCGAT ATTGGCGGAA CAACAATTAA GGCAGATTTA TACGATGAGT TTGGAACGAG	2100
TTTGAATCAT TTCAAAGAGA TAGAAACAAT TATTGACTAT GATTTGGGAA CGAATCAGAT	2160
ATTAAATCAG GTCTGTGATT TAATTGGTGA GTATACTTTA AATCATTCAA TTGATGGTGT	2220

1253

TGGGATTTCC	ACTGCTGGAG	TTGTTAATGC	TAATACTGGA	GAAATCATCT	ATGCAGGCTA	2280
TACAATACCA	GGGTATATCG	GAGTAAACTT	TACTGCCGAA	ATAGAAAAAC	GTTTTGGGTT	2340
GTATACTTTT	GTTGAAAAATG	ATGTTAATTG	TGCTGCATTA	GGTGAATTGT	GGAAGGGACA	2400
AGCCAAAGAT	AAGAAAAATG	TAGTAATGGT	TACTATTGGA	ACAGGTATAG	GAGGCAGTAT	2460
TATTGTCAAC	GGACAAATTG	TTAACGGATT	TAATATACT	GCTGGTGAAG	TAGGTTATAT	2520
TCCTGTAGGT	AATTCGGATT	GGCAAAGTAA	AGCCTCAACA	ACCGCATTGA	TTCATTTATA	2580
TCAAAAAAAG	AGCTTGAAAA	CTAATCAAAC	TGGACGTAAT	TTCTTCACTG	ATTTAAGATC	2640
TGGAGATAAA	GTTGCTGAAG	AAACTTTTGA	AATTTTGTGA	GAAAATCTAA	CAAAAGGTTT	2700
ATTAACGATT	TCTTATCTAC	TTAATCCAGA	AATTCTCATA	TTAGGAGGTG	GGATTCTGGA	2760
TAGTAAGGAT	ATTTTGTTAC	CTGAAATTCA	AAGTTCTTTA	GCTAAAAATG	CAATGGATAA	2820
TAGGTTTTTA	CCTAAAAATC	TTGTGGCAGC	TACATTAGGA	AATGAAGCTG	GTCGTATAGG	2880
AGCTGTAAAA	AATTTCTTAG	ATAGAATTTC	TAATAAATAG	TATGTAAGAT	AAGGAGGTGT	2940
CACAATGACT	AACTCTGTAT	TTTCGACAAT	GCAAGATATT	GAGAATGTTG	CAACCGATAT	3000
TATAAAATCA	TATGATAATG	AGATTTTATC	TTATAAAGCT	GTTTCCCAAG	AAGAATTGGA	3060
AAAAC TAGAA	AAAAGTTATG	ATGAAAAAAG	TCACGAAGAA	TTAGTTTCAA	TAGAAAGCAA	3120
TTTAGAAATG	AAACAACAGA	ACCTTATTGA	TGAGGTAAAT	AAAACAATCA	AGGAAAAATG	3180
TGCAAAATAT	CAGTATATTT	CATCAAGTAG	GAGAGGAGAA	TTGTAGAGAA	AAATTATTGG	3240
TAGGGTGTTA	GAAAAATATG	GCCATTAGTC	AGATGAAAAAG	AATCTCTCTA	CTATTTTCTA	3300
AAAGTAGTCT	TGATGATGTT	TTAAAAACTA	TTCAAGAACT	AGAGTCAGTG	CAGTTCCGTG	3360
ATTTAAAGGT	TCAGGATAAC	TGGTCAGAAG	CTCTAGAAAA	AGATGAAGTT	GTATTTCCAA	3420
CTATTCAAAT	TTTTCATACT	TCTAATTCCA	ATCATGGGGT	TATTGAGGGA	AATGATGCCT	3480
TGACTTATTT	GATGAATCAA	CAACAACATT	TAGAAGCAAC	TGTAGAGAAA	TTACAAGAAT	3540
ACCTACCGAA	AGAAAACACG	TTTAAATTAT	TGCAGCAACC	TCCGATAACT	ACCTCTTATG	3600
AAGAATTAGA	GAAATTTGGT	AAAGCTAATG	TTGCTGAGGG	TGTTCTTAAA	AAAGTGAATC	3660
ATCAAATTAA	CAGAGTTCAT	GAATTAGAAA	GACACATTCA	AAGTAATAAT	GAGGAAATAG	3720
AGCGATTAAT	AAAGTGGGAA	AAATTAGAAA	TTGTTCTCTG	GAATTTAGAA	CAATTTTCTT	3780
TCTGTAAAGG	AAAAGTCGGA	ACAATTCCAA	GGACTGAAGA	TAATCGCTTA	TACAATAGTC	3840
TTTTAGAAAA	CAATATTGAA	GTTCAAGAAA	TATTTTCTAA	TGATAGAGAG	TACGGTGTTG	3900
TTGTTTCTTA	TCAGTCTAGT	TACTCTATAG	ATTTTGATGA	ATACTTATTT	GAACCATTTG	3960

1254

ATTATTCTAG AAAGGAATTA CCGAAGCAGC GAGTAGTAGA TTTAGATCAA GAAAACATGC	4020
AGTTAATAAC TGAAAAAGAG AATATTATCG CATCGTTGCA AGATTCAAAG AAATATTTGA	4080
TAGATTTACA ATGGCAAATA GACTATATTT TATCTATCTA TGCTCGTCAA ATCTCTAAGA	4140
ATAACTTTTT GTGCACTCCG CATCTAGTTG CATTAGAAGG ATGGATAGAA GAAACTCGTA	4200
TTTTATATTT TATAAAAGTT ATGGATGAGC ATTTTGGACA TTCTATTTAT ATTTATGAAT	4260
CGGAAACATT GACGGATAAT CAAGATGAAA TACCTATCAA ATTAACGAAT CATTCCTTAA	4320
TTGAACCATT TGAATTATTG ACAGAAATGT ATGCTCTGCC CAAATATTAT GAGAAAGATC	4380
CTACACCTGT ATTAGACCA TTTTACTTTA CATTTTTTGG AATGATGGTT GCTGATTTAG	4440
GCTATGGTTT ACTATTGTTT TTAGGAACAA TGTTAGCATT AAAAATTTTT CATCTACCTT	4500
CAGCAACTAA GAGATTTTAA AAATTCCTTA ATATATTAGG GGTAGCCGTT GCAATTTGGG	4560
GTGGAATCTA TGGCTCATTT TTTGGATATG AGTTGCCATT TCATCTGATA TCTACAACCT	4620
CTGATGTCAT GACTATATTA GTAGTGTCAG TTGTGTTTGG GTTTATTACA GTATTTGCAG	4680
GTTTGTTAGC TTCAGGACTA CAAAAAGTAA GAATGAATAA ATATGCAGAA GCATATAATT	4740
CAGGATTTGC GTGGTGTGTT ATTCTG	4766

(2) INFORMATION FOR SEQ ID NO: 234:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2484 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 234:

CCTTTTAGAA AAAATTAAAG AATACGACAC CATTATCATT CATCGTCATA TGAAACCAGA	60
CCCTGATGCC TTGGGAAGTC AGGTGGGATT GAAAGCCTTG CTGGAACATC ATTTCCAGAG	120
AAAAACCATC AAAGCCGTCG GTTTTGATGA ACCAACTCTT ACTTGGATGG CTGAGATGGA	180
TCTTGTGAA GATAGAGCCT ACCAAGGCGC ACTTGTATC GTCTGTGATA CAGCTAATAC	240
TGCTCGTATC GATGATAAGC GCTATAGTCA AGGTGATTTT CTCATTAAAG TTGACCACCA	300
TCCAAATGAT GATGTATACG GTGACCTGTC TTGGGTCGAT ACTAGTTCAA GTAGCGCTAG	360
aGaTGATTAC CCTATTTGCC CAAACAACCC AACTAGCCTT GGCAGATCGC GATGCTGAGT	420
TGCTCTTTGC AGGAATTGTC GGTGATACAG GTCGCTTCCT CTACCCCTCT ACCACTGCAC	480
GGACTCTTCG CCTGGCTGCT TATTTGAGAG AACATAACTT TGACTTTGCG GCTCTCACTC	540
GCAAAATGGA CACTATGAGC TACAAAATTG CTAAACTGCA AGGCTACATC TACGACCATC	600

1255

TGGAAGTGA	TGAAAATGGT	GCTGCTCGCG	TTATCCTGAG	TCAGAAAATC	TTGAAACAAT	660
ACAAATATAAC	CGATGCTGAA	ACTGCGGCCA	TTGTAGGTGC	ACCTGGACGC	ATTGACAGAG	720
TGAGTCTCTG	GGGAATTTTT	GTCGAACAGG	CTGATGGCCA	CTACCGAGTT	CGCTTACGCA	780
GTAAAGTCCA	TCCTATCAAT	GAAATTGCCA	AGGAGCATGA	TGGTGGAGGC	CACCTCTAG	840
CAAGTGGTGC	TAATTCCTAT	AGCCTAGAAG	AAAACGAAAT	CATCTACCAA	AAGTTAGAAG	900
ACTTGCTTAA	AAACTGATAA	AATACTTGCC	AACTTTTCA	GAATCTGATA	GACTAGTATA	960
GTAACAATCT	ATGGCTCGCA	AAGAGACCAT	GGCAGAAAGG	AAATATTGCA	AAATGAAAAT	1020
AGATATCCAT	CCAGAATATC	GCCCAGTTGT	CTTCATGGAC	ACAACACTG	GTTACCAATT	1080
CCTTAGCGGT	TCAACAAAAC	GCTCTAACGA	AACAGTTGAG	TTCGAAGGCG	AAACTTACCC	1140
ATTGATCCGT	GTGGAATTTT	CATCAGACTC	ACACCCATT	TACACTGGAC	GTCAAAAGTT	1200
CACTCAAGCA	GATGGACGCG	TGGATCGTTT	CAACAAAAA	TACGGTCTCA	AATAATGATA	1260
AGAGAACAGT	TTTGGCTGTT	CTTTTTTGTT	TCTTGAAATC	AACTGCTGTT	TTCATGTTCC	1320
AGACTCATCT	GTAGGTTTCA	TTTCCATGCT	ACTAGGCAGG	AAGGAAATAG	CTGTTTCAAC	1380
ACGTCATAA	TGAGCTATAC	TATGTGCAG	AACCACACTT	TCATTGATGG	TCCAAGTGG	1440
ATTCAATTTT	TTAAAAGCTT	CTCGGACTTT	TTCCAAATCT	TTGGAGGCAA	TGGCCTGCTC	1500
TAAGGTTTCA	AAACGAGGAC	TTATACTCAT	CTGCTTTCAA	AAAGCATTCT	AGTCCATCTC	1560
CGATTACCGA	TGGACTTTAT	CACCTCCTTC	TCCAGTCTTC	GTATGACATC	TTGAAGTTGA	1620
TTCATGACAT	CTTCCAAAGT	TCGAAAGGCT	TTATTCTTAA	ATCCACGTTT	ACGAATCTCT	1680
TTCCACACTT	GTTCAATGGG	TTCATCTCTG	GTGTGTATGG	AGGAATAAAG	GTAATCAAA	1740
TATTAGTCGG	AATATTTAAG	GTACTTGATT	TATGCCATAT	AGCATTGTCC	ATAACGAGTA	1800
AAAGGATAAG	CTTGTAAG	CTCTTCTAAA	AAGGCGTTCA	TCCACACTCC	TTTTTATAAA	1860
CCTGAAATAA	GGCATCAATT	GTAACAAATT	CTCCTGCCTC	TGTAGCCTTC	AAATGACGGG	1920
CAAGAAAGGC	TTTCTCTTCC	TCAACTGTCA	TATATGCATG	GTTACGACCA	CCACGTGTTT	1980
CTTGAAGGAG	AGAGTCGAGT	CCGAACTCCT	CATATTTTTT	TACGTTTCGC	CAAATCGTTG	2040
TTTGATTACA	GTCTAAAAGC	TCTATAATCT	CTTTATAAGA	TTTGCCCATC	AGACGAAATA	2100
TAGTAGATTG	AAACTAGAAT	AGTACACCTC	TACTTCTAAA	ACATTGTTAG	AAATCGATTT	2160
GTCCTGTTCT	TGTTTCATTT	TACTATAGAA	CGATTTGAAG	GCGTTTATAA	TATTTAGCTG	2220
TACGAGAGTC	TTTTAAAAGT	GTTTTGATGG	TTTGGATTTT	TTCTTTAGTT	GATTTTCATAT	2280
TACTATTATA	TAATGCTTTT	TGATTTTAGT	CTGGTATAAA	TATTGCTTTC	CTCCAAAATG	2340

1256

GTCATAGTTT TACTGGCAAA TCTAACATAT CACGGATAAA TTAACAAGTG ATTTCTGAAT	2400
TGCTAAACAT TTTCTTTTCT TATAGCATAC TTTAAGATTT TGTCTTTGAG AAAGATATTT	2460
CCAAGAAAA CGTTCGTTTT TTGG	2484

(2) INFORMATION FOR SEQ ID NO: 235:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1766 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 235:

CTAGATATAG CTATAATTTT ATTTATAACA AGAGGATAGA AATGACCGAA TTAGAAAGAA	60
AAAATCGAAA AATTAGCTAA GAAATATTCT GATAACTTAA ACATCAAAGT TCAAGAGAGA	120
GTTCTGTAAG TGGCAATGA TAATAAGAGC CATTATTTGA TATACAGAGT TTTAGGTATT	180
TCATTGAAG AAGGAGAAAA TATCGATTG TATCAAAATA AAGGTCGTTT TTTATACAAA	240
TATGCTGGTT CATTTTGTAGA AGAAGCTGCA GTACTATGCT TTAACGAAAA ATTTGGTACA	300
GAAAATACTT AAAAAGTTAA CATTCCTAAT TCTGAAAGTA CAAAACCTAA GACTTTTGAA	360
ATTGATTGTT TAGTCGGAGA AAAACACGCA TACGAAATAA AATGGTGGA TGCAACTACA	420
GATGGAGACC ATATAACTAA AGAACACACT AGAATAAAG TTATTCATAA CAAAGGATAT	480
ATACCAATTC GGTTAATGTT CTACTATCCA AATAGAACTC AAGCTATAAA AATTCAGCAA	540
ACTTTAGAAA CATTTGTATAA CGGTATTGGA GGGAAATATT ATTATGGAGA TTCTGCCTGG	600
GAACATTTAA GAGCAGTGAC CGGTATTGAT TTACTTAGTA TTCTAACAGA TATTGCAAAT	660
AAAAAACAG GGGTAAAATC AAAATGACAG TATTAAGAGG AGATAACTTA GAAATATTAA	720
AAACTATTGA ATCCTCAAGT ATTGATTAA TCTATATGGA CCCTCCTTTC TTTACACAGA	780
AAACCCAAAA ATTATCTAAT AACAAAAATA TTATGTATTC ATTCGAAGAT ACGTGGACTT	840
CGATTGAGGA TTACAAAGAA TTTTGTCTG TAAGATTAGA AGAATGCAA AGAGTGCTAA	900
AAAATAGTGG CAGTATTTTC GTTCATTGTG ATAAATTCG AAATCATCAT ATTAGATTAA	960
TTTATAGATA TATCTTTGGA GTAGATATGT TTCAAAGCGA AATTATATGG AACTATAAAC	1020
GGTGGTCTAA TTCAAAAAAG GGATTATTGA ACAATCATCA AAACATTTAC TTTTATTCAA	1080
AGTCAAAGA TTTTAAATTT AATACAATTT TTACAGAGTA TTCTTCTACT ACAAATATCG	1140
ACCAAATACT AGTGAACGA AACGAGATG GAACTCTAA AACTATATAT AAGGTTGATA	1200
ATAATGGTAA CTATATTCTA GCAAAAGAGA AAAATGGAGT TCCCCTTTCA GATGTTTGGA	1260

1257

ATATACCATT TCTTAATCCA AAAGCTAAAG AAAGAGTAGG TTATCCTACA CAAAAACCTA	1320
TTCTGTTATT AGAACAAATT ATAAAGATTG CTAAGTATAA AAATGATATA GTTTTAGACC	1380
CGTTCTGTGG AAGTGGAAGT ACTTTAGTAG CCTCCAAGAT TTTGAATAGA AATTATATGG	1440
GGATTGATTT ATCTGAGGAA GCTATCAATA TAACTCAGCA ACGTCTGGAA AATGTTATAA	1500
AAACAAGTTC AAATTTATTG AATAAAGGAA TCGAAGCATA TAGAACCAAA ACTGAGGAAG	1560
AGGAAAACAT TCTTAAATTA TTACAGGCAA AAATTGTTCA AAGAAATAAA GGAATTGATG	1620
GTTTTTTACC TAAACATTTT CAAAAAATAC CGATACCTAT AAAAATTCAT AAAAATAATG	1680
AATGTCTGAA TGAGAGTATC TCTTTATTAC AGAATGCTAT AAATCCAAA AAATTTGATT	1740
TTGGAGTAGT TATAAAAGT CATTCG	1766

(2) INFORMATION FOR SEQ ID NO: 236:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 748 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 236:

CCGAAATCA AATTCAAACC ACGTCAACGT CGCCTTGCCG TACTCAAGTA CAGCCTGCGG	60
CTAGTTTCCT AGTTTGCTCT TTGATTTTCA TTGAGTATTA AACTAAATTA AATAATATTA	120
GCGCGGAGAA TTTCTAATTC TTCCTTGGTC AAGCGACGCC ATTCCCCTCG TTCTAGGTTC	180
TCATCTAATA CTAAAGTTC CATAGTCAAT CGTTGCAAGT CCACCACTTC CTTGCCACAG	240
TAGCCACCA TACGCTTGAT CTGATGAAAC TTCCCTTCTG CAATGGTCAC ACGGATTTGG	300
CTTTGATTCCT TTTCTGTATC TATGGATACA AGCTCCAGTA TAGCGGGTTG ACAGGTAAAG	360
TCTTTGAGAG GAATACCCTC AGCAAATGTC TCCACATCTT CTTGGGTCAT GATTCCCTTG	420
ACTTGTGCCA GATAAGTCTT GTCCACATGA CGTTGGGCG AAAGAAGAAC ATGAGCCAGC	480
TGACCATCAT TGGTCAAGAG CAAAAGACCA TGCCTGTCAA TATCCAAGCG TCCTACTGGG	540
AAACTTCCT TACTCCGCGC CAAGTCATCC AACAAAGTCCA GAACGGTTCT GTGCTTGGGA	600
TCCTCAGTCG CTGAGATAAC TCCTTTGGGC TTGTTTCATCA TGAGTAGAC AAATCTTCA	660
TACTCCAACA CTTGCCCATC AAAGCGAATC TCATCTATTT TTTCATCAAT CTGCAATTTA	720
GCTGATTTT CTTTTTGACC ATTTACAG	748

(2) INFORMATION FOR SEQ ID NO: 237:

1258

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1449 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 237:

AAAAGATTAC ATTGCAACAA TTGAAAATTA TCCAAAGGAA GGCATTACCT TCCGTGATAT	60
TAGTCCTTTG ATGGCTGATG GAAATGCTTA TAGCTACGCT GTTCGTGAAA TCGTTCAGTA	120
TGCTACTGAC AAGAAAGTCG ACATGATCGT GGGACCTGAA GCTCGTGGAT TTATCGTGGG	180
TTGTCCAGTT GCCTTTGAGT TGGGAATTGG TTTTGCGCCT GTTCGTAAGC CAGGTAAATT	240
GCCACGCGAA GTTATTTCTG CTGACTATGA AAAAGAGTAC GGTGTGCGATA CCTTGACTAT	300
GCACGCGGAT GCCATTAAGC CAGGTCAACG TGTTCCTATT GTAGATGACC TTTTGGCGAC	360
AGGTGGAAGT GTTAAGGCAA CTATCGAGAT GATTGAAAAA CTTGGTGGTG TTATGGCAGG	420
TTGTGCCTTC CTTGTTGAAT TGGATGAATT GAACGGCCGT GAAAAAATTG GTGACTACGA	480
CTACAAAGTT CTTATGCATT ATTAATGAAA ACAGTCCCTA GGGCTGTTTT CTCTACACTA	540
GGATATAAAA ATAGACTATA ACTAGTTAGA GAAAACTAT AATTGAAAAAC TATATCTTCT	600
TGCAGTATAA TAAAAGGACT AAGTGTGTTGA GATTGTGCTT CAAACATATG CAATTATTCC	660
TGAAAGAGTA CAGTTAGGAG AGGGTTATGC CGATTGCAAT TGATAAAAAA TTGCCAGCTG	720
TTGAGATTTT ACGGACAGAG AATATCTTTG TCATGGATGA TCAACGTGCT GCCCACCAG	780
ATATCCGTCC TTTGAAGATT TTAATTTTAA ATCTCATGCC ACAGAAAATG GTCACAGAGA	840
CCCAGTTGTT GCGCCACTTG GCTAATACAC CCCTACAACCT GGATATTGAT TTTCTCTATA	900
TGGAGAGCCA CCGTTCTAAA ACAACTCGTT CAGAGCACAT GGAGACCTTC TATAAACTT	960
TTCTTGAAGT CAAGGATGAG TATTTTGATG GGATGATCAT CACGGGTGCT CCAGTTGAGC	1020
ATTTACCATT TGAGGAAGTG GACTATTGGG AGGAATTAG ACAGATGCTT GAGTGGTCTA	1080
AGACTCATGT CTATTCGACC CTTCATATCT GTTGGGGGGC TCAGGCTGGG CTTTATCTGC	1140
GCTATGGTGT AGAAAAATAC CAGATGGACA GTAAGCTATC AGGTATTTAT CCTCAGGACA	1200
CCCTAAAAGA GGGTCACCTT CTATTTAGAG GCTTTGATGA TAGCTATGTA TCCCCTCAT	1260
CACGGCACAC GGAGATTTCT AAGGAAGAGG TCTTAAACAA GACCAATCTC GAGATTTTAT	1320
CAGAAGGACC TCAGGTGGG GTTCTATTW TGGCCAGTCG TGATTTACGA GAAATTTATA	1380
GTTTTGGTCA TTTGGAGTAT GACCGTGATA CTTTGGCAAA AGAGTATTTT CGAGATCGTG	1440
ATGCAGGTT	1449

1259

(2) INFORMATION FOR SEQ ID NO: 238:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 904 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 238:

TACCCGCTTC TTTCAAGAGT TGGAGCAGGG CTGTTTGCG ATCTTTTGTC ATAGTTCTTC	60
CTTTTAACGG CGTTTTCGAA GCACTTTATA GACAGCTAGT GCTAATGTAT AGTCTACCAT	120
ACTATGGATA ATTGTACCAA ATCCAAC TAG TACAAATAGA ACATAAAACA TATTTTCTAC	180
ATTGGTACCA GAAGTTGCGT AAAAAACGAC ACAGGCCAAT ACTTCAGCAA GGGCATGAAC	240
AACAGCCAAA ACAAAGTTGA AAATCCAGGA AGATTTTGGT TTATCTAGGG TATCGGGGAA	300
TTTTTG TAGG TAAAGAGCTC CTAAAGCACC AAAAGATATA TGGGAAAAAG CCCGAAAAAC	360
GATAACCATG GGATAGCCAG CCATCAAAAA TCCAAAAC TA GAGGCTAGGA TGACAAAAAC	420
TGCCATCAAG GGCACAAAGA ACATGGCTAT AAAAATAGCG ATGTGGCTCC CCAAAGTATA	480
GGAAGCAGGT GGAATGACAA TCTTGAAAGG CATAACAATT GGAATCAAAA TCGCAATAGC	540
CGTTAAAAGG GCTGTCATTG TCATAAATTG TGTCTTTTC CGTGTATTCA CAAGAATCTC	600
CTTTTAACT GCATATACAC TAGTATGGTA CAATAAACCA GACAATAAAG CAAGAATTTA	660
CTTGGGTTTA TAGATCATTT TTTAGTTAAA AGTTATAGTA GATTGAACT AGAATAGTCC	720
ACCTCTACTT CTAAAACATT GTTAGAAATC GATTTGGCTG TCCTGATCGA TTTGTCCTGT	780
TCTTATTTTCG TTTTACTATA GTAAAGATTT CATTA AAAAG AACTGTATA GAGCAAAATC	840
TCCACCTTCA GGT TTGGAAA GCGGAGATTG TTTnTTATTT TTTCCAGGGT TTGTAGTCGT	900
GGGA	904

(2) INFORMATION FOR SEQ ID NO: 239:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 946 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 239:

CACTCAAACA TGACTTATAT CAAGACGGAT GGA CTCAAG ACGATGCCAA TCGCTTGAAT	60
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1260

CGTAACATTC AGTTTGGTGT TCGTGAATTT GCAATGGGAA CAATCTTGAA CGGGATGGCC	120
CTTCATGGTG GACtTCGTGT ATACGGTGGA ACTTTCTTCG TCTTCTCTGA CTATGTGAAG	180
GCAGCTGTCC GCTTGTGAGC CTTACAAGGA CTTCTGTGA CTTATGTCTT TACCCATGAT	240
TCAATCGCAG TTGGGGAAGA TGGTCCGACT CATGAACCAG TTGAGCATTT AGCAGGTCTT	300
CGTGCTATGC CAAATCTAAA TGTTTTCCGT CCAGCAGATG CGCGTGAAAC GCAAGCAGCT	360
TGGTACCTTG CAGTGACAAG TGAGAAAACA CCAACTGCCC TTGTCTTGAC ACGTCAAAAT	420
TTGACTGTG AAGATGGAAC AGACTTCGAC AAGGTGCTA AAGGTGCTTA TGTGTATAT	480
GAAAATGCAG CCGACTTTGA TACCATCTTG ATTGCGACAG GTTCAGAGGT TAATCTTGCT	540
GTCTCAGCTG CTAAAGAATT GGCTAGTCAA GCGGAAAAAA TCCGCGTAGT CAGCATGCCA	600
TCTACAGATG TCTTTGATAA ACAAGATGCA GCTTACAAGG AAGAAATTCT TCCAAATGCA	660
GTCCGCCGTC GTGTTGCAGT CGAAATGGGT GCAAGTCAAA ACTGGTACAA ATATGTTGGT	720
CTCGATGGTG CCGTTCTAGG TATTGATACT TCGGAGCCTC TGCCCCAGCA CCAAAAGTAT	780
TGGCAGAATA TGGCTTTACT GTAGAAAATC TTGTAAAAGT TGTTGGAAC TTGAAATAAT	840
CCTAAAAATC AGGGCGTAAG CTCTGGTTTT TCTTACCAGA AAAGTAAGGT ACAATCTTGT	900
AAAAGTAGCT GAAATTTGAT ATAGTAGTCC TATGTAAAAG ACAAAG	946

(2) INFORMATION FOR SEQ ID NO: 240:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2764 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 240:

CGGGGCTCCc TAGTTCTTAG GGAGCTATTT TTGTTTTTC AAGAAGTTAT CTTCTTGAT	60
TTTATACTCA ATGAAAATCA AAGAGCAAGC TAGGAACTA GCCGTAssTG CTCAAAACAC	120
TGTTTTGAGG TTGTAGATAA GACTGACAAA GTCAGGAACA CATATCTACG GCAAGGCGAC	180
GTTCAGCGCG TTTGAAGAGA TTTTCGAAGA GTATTAGTTG TGAATCTGGT GCAGTCGTCC	240
CAGATTATTC TTATTAGTAG GGTCTTGTTT TCTATATCCC CTCGTAGTTA ACAAGACCTT	300
GAGCATTTTA GAAAGAGGAA TCTATGTCTA CGAAATATAT TTTTGTAAC TGGTGTGG	360
TATCGTCCAT TGGGAAAGGG ATTGTGGCAG CGAGTCTAGG CCGTCTCTTG AAAAATCGTG	420
GTCTCAAAGT AACCATTCAA AAGTTTGACC CTTATATCAA TATTGATCCG GGAACCATGA	480
GTCCTTACCA GCACGGGGAA GTTTTTGTGA CAGATGACGG AGCTGAGACA GATTTGGACT	540

1261

TGGGTCACTA TGAACGTTTC ATCGATATCA ATCTCAACAA ATATTCCAAC GTGACAAC TG	600
GGAAAATT TA CAGTGAAGTT CTTTCGTAAAG AACGCCGTGG AGAATACCTT GGGGCAACTG	660
TTCAAGTCAT TCCTCATATC ACAGATGCTT TGAAAGAAAA AATCAAGCGT GCCGCTCTAA	720
CGACCGACTC TGATGTCATT ATCACAGAGG TTGGTGGAAC AGTAGGAGAT ATCGAGTCCT	780
TGCCATTCCCT AGAGGCTCTT CGTCAGATGA AGGCAGATGT GGGTGCGGAT AATGTCATGT	840
ATATCCATAC AACCTTGCTT CCTTACCTCA AGGCTGCTGG TGAAATGAAA ACCAAACCAA	900
CCCAACACTC TGTCAAAGAA TTGCGTGGCT TGGGAATCCA ACCAAATATG TTGGTTATTC	960
GTACAGAAGA GCCAGCTGGT CAAGGAATTA AAAATAAACT GGCCCAAGTTC TGTGATGTGG	1020
CACCAGAAGC CGTTATCGAA TCGTTGGATG TTGAACACCT TTACCAAATT CCACTGAAC	1080
TGCAGGCACA AGGGATGGAC CAAATTGTTT GTGATCATTT GAAATTAGAC GCACCAGCAG	1140
CGGATATGAC AGAATGGTCA GCCATGGTGG ACAAGGTCAT GAACCTCAAG AAACAAGTTA	1200
AGATTTCCCT TGTTGGTAAG TATGTGGAGT TGCAAGATGC CTATATCTCA GTGGTCGAAG	1260
CCTTGAAACA CTCTGGCTAT GTCAATGATG CAGAAGTTAA AATCAATTGG GTCAATGCCA	1320
ATGATGTGAC AGCAGAGAAT GTAGCAGAAC TCTTGTCTGA TGCGGACGGG ATCATCGTAC	1380
CAGGTGGTTT TGGTCAACGT GGTACAGAAG GGAAAATCCA AGCCATCCGC TATGCGCGTG	1440
AAAATGATGT TCCAATGTTG GGAGTCTGCT TGGGAATGCA GTTGACATGT ATCGAGTTTG	1500
CTCGTCACGT TTTAGGTCTT GAAGGTGCCA ATTCTGCAGA GCTTGACCA GAAACAAAAT	1560
ACCCTATCAT TGATATCATG CGTGATCAGA TTGATATTGA GGATATGGGT GGAACCTTC	1620
GTTTGGGACT TTATCCGTCT AAGTTGAAAC GTGGCTCTAA GGCTGCTGCT GCTTATCACA	1680
ATCAAGAAGT GGTGCAACGC CGTCACCGTC ACCGTTATGA GTTTAATAAT GCCTTCCGTG	1740
AGCAGTTTGA GGCAGCAGGT TTTGTCTTTT CAGGAGTTTC TCCAGACAAT CGTTTGGTAG	1800
AAATCGTGGA AATTCCTGAA AATAAATTCT TTGTAGCTTG TCAGTATCAC CCTGAACTGT	1860
CAAGCCGTCC AAACCGACCA GAAGAACTCT ACACCTGCCTT TGTTACTGCA GCAGTTGAGA	1920
ACAGCAATTA GCAAAATCAG AACCTTTGAG AAAAATCTCA GAGGTTTTTT GCATACGATG	1980
ATATTGCAGT ATATCTGAGG TAGGGGTCCT CTGTATGTAC CTGCTACCGT TGAAATCAAT	2040
AGCGACTCCC TCTTGCCCTG TGCTAGTGAA TGGATTTATC AGTATATTGA AATGAAATAA	2100
AATTTGAACA AATTAATTCG GAAAGCCAAA TCAATTTCTA GCAAAGTTT AGGAACTGGA	2160
TTGTATAGTG AATTGAAATA AGATGTGAAC ATCTCTATCA GGAAAGTCAA ATTAATTTAT	2220
AGAAATATTT TAGCAGTCAA GATGTACTGT TATAGATTCA ATACATTATA CTTTTTTAAT	2280

1262

TTAATCCACT ATAGTAAAAT GAAATAATAA CAGGACAAAT CGATCAGGAC AGTCAAATCG	2340
ATTTCTAACA ATGTTT TAGA AATAGAGGTG TACTATTCTA GTTCAATAT ACTATCCCAA	2400
ATCATT CATA CCTCTCTCAA CTAGATGTAA CTTACAAAAC CCCTGACCTC ATGAGCCACT	2460
TTCTTCCCTC TCATGAGGTC AGTTTTACTT TCTGCTGTTC CAGTATCGTT TTTCCCTCGCT	2520
AGATTTCCCTC AAAAGGGCAG ACTCCTCCCT TGGTGCCTCA CACGATTTTT TCATCTCGAC	2580
TGTTCTTTAA TGCATCATTA ACGACGCTTT TCTTCTAGGT GGTTCATAAG GAACAGGAAG	2640
ATTCAGGTG ACTTTTCTAA TCCTAGAATA AAGTGCTGAA AACAATTCGG AATAGGCATA	2700
GAGACTAGAC AATTGAGGA GCTGCTTGC GCTGCTGCG TCCTGTTCTGA ACACATTTTC CCACCACGTG	2760
AAGA	2764

(2) INFORMATION FOR SEQ ID NO: 241:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1682 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 241:

CCGTTTTTTT CATGTTCAG TACTACAAC TACGTTGTAG CGCCCTGCAC ATTGGTTCGT	60
CTTGTT CAGT TTTCAAAGGT CTTGTCACT TGCTTCTCTC AAGCGACAAC TATATTAGTA	120
TATCACAACT GCTTTCGCTT GTCAACACTT TTTTGAAGAT TTTTAAGTTT TTTTAACTT	180
TTTTTCATCA AGTGGTCCTG ACGCAACATA CCATAGTCCG TACGGGATTC GAACCCGTGT	240
TACCGCCGTG AAAAGGCGGT GTCTTAACCC CTTGACCAAC GGACCTGAGT TGTATTTTTC	300
AACTCTTACT ATTATACAGT CTTTTCAAAC TTGTCAACT ACTTTTTTAA ACTTTTTTTA	360
TTAATTTTAC AACAGCTTCA GTTCGAGCTG TATGTGGGAA CATATCGACC GACTGGATAT	420
AATGAAGATC ATAGACTTCT ACTAAGCGTA CCAAATCACG AGCCAAGGTC GAAACATTAC	480
AAGAAATATA AACCATTTTT TCTGGTACAT AAGTAAGAAT AGTATCTAAT AACTTATCAT	540
CCAGACCTGT ACGTGGTGGG TCAACAATCA AAGCATCTGC TCGGTAGCCT TCCTTGATACC	600
AACGAGGAAT AATCTCTTCT GCCGTTCCAG CTTCATAATG AGTATTGTCA AATCCCATT C	660
TTTTAGCATT TCGCTGGCA TCTTCAATAG CTTCTGGAAT AATATCCATA CCTCTGAGTG	720
TTTTTACTTT CTTTGCAAAG GCAAATCCAA TCGTTCCAAC TCCACAATAA GCGTCAATCA	780
AATGGTCTTC TTTATCAACA TCCAGCGCTT TTA CTGCTTC GCTATAGAGG ACTTCTGTTT	840
GCTCAGGATT TAGTTGATAA AAAGCTCGAG GGGATAGTGA AAATTCATAA TTAGTACAC	900

1263

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CTTCTTGAAT ACTCTCTTGC CCCAGATAA TCTCTGTCTT TTCACCATAT ATCTCACTGG      960
TTTTAGCTGT ATTTGTATTA ACAGCTACTG TCACAACTTC TGGGAAATCT TTAACCAACT      1020
CTTTTACCAA TTGAGTTAAA TTAAGCTGGC GGTTCGTAAC AATAATAATC TGAACCTGTC      1080
CGGTCTTTCT CGCGCGTCGG ACCATAATAG TACGGACACC TAGAACTTTT CTCTCATCCG      1140
TGATTGGAAT CTGGTGATAA GTAAGTAATT CTGCTAAGCG ATTAGCAATC ACTTGGGTTT      1200
CCTTATCTTG TACCAGGCAG TCTTTCAACT CTACTAAATA GTGAGAGTTT TGTGCATATA      1260
AGCCCGCCTT GACCTGATTT TTAAATTTTC GAGTCTGAAA TTGTAACCTA GCTCTGTAAT      1320
ATTTTGGTTC CTGCATTCCA ATAGTTGGAC GAATTTTATA ATTTTCATAT CCTGCAGGAG      1380
CAAATTTTTT CAGCGCTTGA TGAAGTAAGT CCGTCTTGAA CTCCAGCTGC TTATCATAAT      1440
GCAGGTGCAT GATTTGGCAG CCTCCGCATT CATTATAAAT AGTACAAGAT GGCACAATTC      1500
GAAATTTAGA CTTCTTGTG ACCTTCAGTA ATTTTGCTTC AACAAAGTTG CGTCTAATAG      1560
AAGTAATCTG ACAATAGATA TCTTCGCCTT TGAGAGCTCC TGGTACAAAG ACTAATGTTT      1620
TTTGGTAAAA GCCGATTCCC TCACCGTTAA TTCCCATGCG CTTGATTTT AATGGTATTT      1680
TT

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(2) INFORMATION FOR SEQ ID NO: 242:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2524 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 242:

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TTAACTTTGG TCAATCTTT AAAGTCATCC TCTGTAAGCA TGTCTAACCA TTGATGTTTC      60
CCTTTATTGC TAAAATCACC AATTCCGACT ACAGCTATAT CTAAATCTTT CCAACTATTT      120
TTCAAATTTT CAAAATATCT TGATTGCAAA ATACCATCTG CTAACAATTT ATTTTCTTGC      180
ACAATCGTTG CATTCATAAA TGTACACTCT CCATGAAATT TTCTAGACAT TTCATAAATC      240
AGTGTATTCA CATGGTATTT AGCGTGTATG TGA CTAGGAC CACCTGCTAG AGGATAGAAG      300
TGAACATTTT GGACACTTTT ACTGTGAATT AAATCTACTA AATTACTTAA ACTTTTCCCC      360
CAAGAAAAGC CAATTTTCAT ATTATCATCA ATTAGATTCC TAAGGACGCC TGCTGCAACT      420
TGAGAAATTC TTTCAGATAA AATTGTTGGA GTATCATCAA ATTCATTTGG AATAATTTCT      480
AAACTTTCCA AACTGTATTT TTCTTTTACA TAATTTTCCA ACTTAAACAT ATTGGTATCA      540

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1264

AAATTCTCTA TTTCAATTTT AACAAATTCCT ACATTCCCTG CTTCTGTAA CATTCTACTA	600
ATAGAGGTTT TATAAATTC TAATTTTGCT GCTATTTGTG ACTGATTTAA GTTTTCAATA	660
TAATACAGAT AAGCAATTTT AGAAAGCAGT TTATTCCTAT CTTGATTCAT AACTTTAACC	720
TCTTACGAAA CTACCTTAAC CATTATCCCA GCATTTTCTA ATGTAGCTAT ATTTTGTTTA	780
GAAAGTTTTT CGTCTGTTAT TACTTCATAG ACTTGACTTA AAGCAAATCT TCTTACTGTA	840
CCTCTTTTAT CAAATTTACT TGAGTCAGTT AGGACAATGA CTTTATCCGA CACTGCTGAA	900
ATATATTGAA CTACCTCACT GCGCATTAAT TCTTTTCCGG TAAAGCCCAT CTCTTTATCG	960
TAACCATCTG TCCCAACAAA AGCTTGACAC ACATGAAAAG TCTGTATCAT TTCTTTTAAT	1020
AAAGGTCCTA CAGTCACCTG TGAATCTTTC TGAAACTCAC CACCAAGAAC AATAACACGA	1080
CATGAATCAT AAGCTCTCAC AAAATTTGCT ATAAAAACG AATTTGTTAC AATCGTAACA	1140
TTTCTTTTTT GCTTGCAAAT TTCCTCAGCA AGTAAAGCAC AGGTCGATCC AGATTCTATC	1200
ATTATGTTT CATTATCTGA CACCAATTTT ACTGCTTCCT GAACAATTTT TCTCTAGTT	1260
TCATAATTAA TTGACAAACG TACATTTAAG TCATCTCCAC TATTTAATAC AGCATATCCA	1320
TGCTCTCTGT GTAATAAACC TTTTGACTCT AATTTATCTA AATCTTTTCT AATCGTFACT	1380
TTGATACAT TTAATTTTTC CGATAATGTA TTAACGTCGA TCTTTTCATA TTCTGATACT	1440
AATTTAATAA TTTGTTCCAA TCTTTTCATT TTACACCTCC GTTTTATCTCT ACCAAAATAA	1500
AAAGCAAAAA ACAACAAAT AACCTTTCGT TCGTAATTGT TTTTCTTTCTG TTTTGTGAT	1560
AGGATAGACT TATGAAGAGG AGGAACTCTT ATGGAAATAT CTAAAGGAAT TATTTTAAAT	1620
ATTCAACACT TTTCAATTCA TGACGGTCCG GGTATTCGTA CAACTGTTTT TTAAAAGGA	1680
TGTCCTCTGC GCTGTCCATG GTGTTCTAAT CCTGAATCTC AAAGAATGAA ACCTGAAAAA	1740
ATGAAAGATG CTCAACGAGA GAAATTCACC TTAGTCGGTG AAGAAAAGAC TGTAAGAAGAA	1800
ATTATTACAG AGGTATTAAA AGACAAAGAA TTTTACGAAG AATCCGGTGG AGGTTTAACT	1860
TTATCAGGAG GTGAAATATT TGCTCAGTTT GAATTTGCTA AAGCCATCTT AAAATCAGCT	1920
AAAGAACATC ACATACACAC TGCCATTGAA ACTACTGCCT TTGTTGATCA TGAAAAATTT	1980
ATTGATTTAA TTCAATATGT GGATTTTATC TACACAGACC TAAAACATTA TAATTCTATA	2040
AAACATAAAA AAGTGACTGG GGTTTTAAAT CAAATGATTA TTAAAAACAT TCATTATGCT	2100
TTTTCACAAA ATAAAACTAT CGTTTAAAGA ATCCCAGTTA TTCCTAATTT TAACAATAGT	2160
TTAGAGGATG CAGAAAAATT CGCTACTCTA TTAACTCAT TAAATATCGA CCAAGTCAA	2220
CTACTCCCTT TTCATCAATT TGGTGAAAAC AAATATCGTT TATTAAATCG GAAATATGAA	2280
ATGGATGGAA TCAACGCACT TCATCCWGAA GATCTTATG ATTATCAAAA GGTATTTCTG	2340

1265

AACCACCATA TTAATTGTGA TTTCTAGTTT ATTCCTTGA AATGCTCTAG CTATTTCAG	2400
ATAACAAGCA TCTATAATAC ATACTTAACT TTTCAAAAGG TTTAGCTAAA AAATTTTAGC	2460
CAACCTTTT CTATTTTACC TTGCTCTAGA ATTTTAAAC TGCTATACTT ATCACAAAAA	2520
AACG	2524

(2) INFORMATION FOR SEQ ID NO: 243:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2359 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 243:

CGTGCTTGGG GGCTTGTGGT CAAAAGGAAA GTCAGACAGG AAAGGGGATG AAAATTGTGA	60
CCAGTTTTTA TCCTATCTAC GCTATGGTTA AGGAAGTATC TGGTGACTTG AATGATGTTT	120
GGATGATTCA GTCAAGTAGT GGTATTTACT CCTTTGAACC TTCGGCAAAT GATATCGCAG	180
CCATCTATGA TGCAGATGTC TTTGTTTACC ATTCTCATAC ACTCGAATCT TGGGCAGGAA	240
GTCTGGATCC AAATCTAAAA AAATCCAAAG TGAAGTCTT AGAGGCTTCT GAGGGAATGA	300
CCTTGAACG TGTCCCTGGA CTAGAGGATG TGAAGCAGG GGATGGAGTT GATGAAAAAA	360
CGCTCTATGA CCCTCACACA TGGCTAGATC CTGAAAAAGC TGGAGAAGAA GCCCAAATTA	420
TCGCTGATAA ACTTTCAGAG GTGGATAGTG AGCATAAAGA GACTTATCAA AAAAATGCGC	480
AAGCCTTTAT CAAAAAAGCT CAGGAATTGA CTAAGAAATT CCAACCAAAA TTTGAAAAAG	540
CGACTCAGAA AACATTTGTA ACACAACATA CAGCCTTTTC TTATCTAGCG AAGAGATTTG	600
GGCTTAATCA ACTTGGTATT GCAGGTATCT CTCCTGAACA AGAACCAAGT CCACGACAAC	660
TAACAGAAAT TCAGGAATTT GTTAAGACCT ATAAGGTAA AACGATTTTT ACAGAAAGTA	720
ACGCTTCTTC AAAAGTAGCT GAAACTCTTG TCAAATCAAC AGGTGTGGGT CTTAAAACTC	780
TGAATCCTTT AGAGTCAGAC CCACAAAATG ACAAGACCTA TTTAGAAAAT CTTGAAGAAA	840
ATATGAGTAT TCTAGCAGAA GAATTAAAGT GAGGAAAGAA TGAAAATTAA TAAAAAATAT	900
CTAGCAGGTT CAGTGGCAGT CCTTGCCCTA AGTGTGTGTT CCTATGAGCT TGGACGTTAC	960
CAAGCTGGTC AGGATAAGAA AGAGTCTAAT CGAGTTGCTT ATATAGATGG TGATCAGGCT	1020
GGTCAAAAGG CAGAAAACCT GACACCAGAT GAAGTCAGTA AGAGGGAGGG GATCAACGCC	1080
GAACAAATTG TTATCAAGAT TACGGATCAA GGTATGTGA CCTCTCATGG AGACCATTAT	1140

1266

CATTACTATA ATGGCAAGGT TCCTTATGAT GCCATCATCA GTGAAGAGCT CCTCATGAAA	1200
GATCCGAATT ATCAGTTGAA GGATTCAGAC ATTGTCAATG AAATCAAGGG TGGTTATGTC	1260
ATTAAGGTAA ACGGTAAATA CTATGTTTAC CTTAAGGATG CAGCTCATGC GGATAATATT	1320
CGGACAAAAG AAGAGATTAA ACGTCAGAAG CAGGAACGCA GTCATAATCA TAACTCAAGA	1380
GCAGATAATG CTGTTGCTGC AGCCAGAGCC CAAGGACGTT ATACAACGGA TGATGGGTAT	1440
ATCTTCAATG CATCTGATAT CATTGAGGAC ACGGGTGATG CTTATATCGT TCCTCACGGC	1500
GACCATTACC ATTACATTCC TAAGAATGAG TTATCAGCTA GCGAGTTAGC TGCTGCAGAA	1560
GCCTATTGGA ATGGGAAGCA GGGATCTCGT CCTTCTTCAA GTTCTAGTTA TAATGCAAAT	1620
CCAGCTCAAC CAAGATTGTC AGAGAACCAC AATCTGACTG TCACTCCAAC TTATCATCAA	1680
AATCAAGGGG AAAACATTTC AAGCCTTTTA CGTGAATTGT ATGCTAAACC CTTATCAGAA	1740
CGCCATGTGG AATCTGATGG CCTTATTTTC GACCCAGCGC AAATCACAAG TCGAACCGCC	1800
AGAGGTGTAG CTGTCCCTCA TGGTAACCAT TACCACTTTA TCCCTTATGA ACAAATGTCT	1860
GAATTGGAAG AACGAATTGC TCGTATTATT CCCCTTCGTT ATCGTTCAAA CCATTGGGTA	1920
CCAGATTCAA GACCAGAAGA ACCAAGTCCA CAACCGACTC CAGAACCTAG TCCAAGTCCG	1980
CAACCAGCTC CAAGCAATCC AATTGATGAG AAATTGGTCA AAGAAGCTGT TCGAAAAGTA	2040
GGCGATGGTT ATGTCTTTGA GGAGAATGGA GTTCTCGTT ATATCCCAGC CAAGGATCTT	2100
TCAGCAGAAA CAGCAGCAGG CATTGATAGC AACTGGCCA AGCAGGAAAG TTTATCTCAT	2160
AAGCTAGGAA CTAAGAAAAC TGACCTCCCA TCTAGTGATC GAGAATTTTA CAATAAGGCT	2220
TATGACTTAC TAGCAAGAAT TCACCAAGAT TTAAGTGATA ATAAAGGTCG ACAAGTTGAT	2280
TTTGAGGCTT TGGATAACCT GTTGAACGA CTCAAGGATG TCTCAAGTGA TAAAGTCAAG	2340
TTAGTGAAG ATATCTTG	2359

(2) INFORMATION FOR SEQ ID NO: 244:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1052 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 244:

TTCTTTCTGC TATAATCGTA TAAATACTT ACTTTAGGAG TTCTTATGAA AGTTGTAAAA	60
TTTGGAGGTA GTTCTCTTGC CTCTGCTAGT CAATTAGAAA AAGTTTAAAA CATCGTCAAA	120
AGCGATTGAG AGCGTCGTTT TGTAAGTCGTT TCTGCGCCTG GTAAACGCAA TGCTGAAGAT	180

1267

ACTAAGGTTA CGGATGCCCT GATTAAATAC TACCGCGACT ATGTTGCGGG TAACGATATT	240
AGCAAGAACC AAAGCTGGAT TATCGACCGC TATGCTGCTA TGGTTAGTGA ATTGGGACTA	300
AAACCAGCTG TGCTAGAAAA AATTTCTAAA AGCATTCACG CCTTGGCCAC TCTTCCTATT	360
GAAGAAAATG AATTTCTCTA CGATACTTTC CTAGCAGCCG GTGAAAATAA CAATGCCAAA	420
TTGATTGCTG CCTACTTTAA CCAAATGGT ATCGATGCAC GCTATATGCA CCCTAGAGAA	480
GCTGGGATTG TGGTCACAAG TGAACCTGGT CACGCTCGCA TCATTCCATC AAGTTATGAC	540
AAGATTGAAG AATTGACAAA CACCAATGAA GTCCTTGTC AATCCTGGTTT CTCTGGTGTC	600
ACTAAGGAAA ATCAAATCTG TACTTTCTCA CGTGGAGGTT CTGATATTAC AGGTTCTATC	660
ATTGCTGCTG GTGTCAAAGC TGACCTCTAT GAAAACCTTA CGGACGTTGA TGGTATCTTT	720
GCAGCCCACC CTGGTATTAT CCACCAACCA CACTCGATTG CTGAGTTGAC CTACCGTGAA	780
ATGCGCGAGT TGGCCTATGC AGGCTTCTCA GTCCTTCATG ACGAGGCTCT TCTTCCTGCC	840
TACCGTGGA AAATTCCTCT GGTATCAAG AATACCAACA ACCCTGACCA TCCAGGTACT	900
CGTATCGTTC TAAAACACAG TAATGATGAA TTTCCAGTTG TGGGAATTGC TGGTGACTCA	960
GGCTTTGTCA GCATTAACAT GTCGAAATAC CTCATGAACC GTGAGGTTGG ATTTGGCCGC	1020
AAGGTTCTGC AAATCCTGGA AGAACTTAAC AT	1052

(2) INFORMATION FOR SEQ ID NO: 245:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 855 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 245:

CCCTCGAAAA CTAAGCCGAT GAAGTCAGAA CACTTCAATC CTGTTGCTGA CTGGTGGGAA	60
AATCGTGAAG AGATTCTGGA AGGTAAGTTC TACAAATCTA AATCATTTAC ACCTAGTGAA	120
TTGGCTGAGT TGAATTATAA TTTAGACCAG TGTGACTTTC CAAAAGAGGA AGAGGAAATC	180
TTAAATCCCT TTGAGTTGAT TCAGAATTAT CAAGCGGAAA GAGCAACTTT AAATCATAAG	240
ATTGATAATG TATTAGCTGA TATTTTGAGG TTGTTGGAGG ACAAATAATG ACACCAGAAC	300
AACTTAAAGC AAGTATTCTC CAAAGAGCGA TGAAGGGGAA ATTAGTGCCG CAAAATCCCA	360
ATGACGAACC TGCAAGTGAA TTATTAAAGA GAATTAAAGC TGAAAAAGAA AAATTATCA	420
GTGAAGGAAA AATCAAACGA GATAAAAAGG AAAGTGAATG ATTTGCTGGT GATGATGGGA	480

1268

AACATTATGG GAAGTTTGCT GATGGAAGCA CTCAAGAAAT TGATGTTTCCT TATGATATTC	540
CTGATACTTG GGAGTGGGTG AGGATAAAAT CAATTTATTG GAATTTTGGG CAAAATAAGC	600
CAGAGAAATC CTTTAGGTAT ATAGATACGT CTAGTATTGA TAGAAAAAAG AACATAATCA	660
ACTACAAAAA TCTACAATAT CTTTCACCTG AACAAGCGCC TTCCCGTGCT AGAAAATTAG	720
TTTCGCAGAA TAGTGTCTTA TTTTCAACAG TTAGACCATA TCTAAAAAAT ATGCTGTAG	780
TTAGAGAACT TAAAGAGTAT TTGATAGCTA GTACAGCATT TAATGTTTGT GGATACTTTA	840
CTTAACGAAA CATAT	855

(2) INFORMATION FOR SEQ ID NO: 246:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 660 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 246:

TTTAGGAAGG CTATCCGTAA TTTTACAAAG GATTAGATA TTACAGAGGA ACATTTAGAT	60
ATTATCAAAA GAGAGATGTT TGGCGAATTT TTCAGTAGCA TGAACCTCTCT TGAATTTATT	120
GCAACGCAAT ATGATGCTTT TGAAATGGT GAGATAATTT TTGATTTGCC GAAAATTTTA	180
CAGGAAATTA CTTTAGAGGA TGTCTTGAT GCTGGACATC ATTTAATAGA TGATGGTGAC	240
ATAGTTGATT TTACAATATT CCCATCGTAG TAACCTATTA TAATAGACAC TAGAAAGAAG	300
GGATGACAAG TATGAGAAAA AAAACAATTG GAGAGGTTTT ACGATTAGCT AGAATCAATC	360
AGGGATTGAG TTTAGATGAA TTGCAGAAAA AGACAGAAAT CCAGTTAGAT ATGTTGGAAG	420
CAATGGAAGC AGACGATTTT GATCAACTTC CAAGTCCTTT TTACACGCGT TCTTTCTTGA	480
AAAAATATGC ATGGGCTGTT GAGTTAGATG ACCAAATTGT TTTGGATGCT TATGATCTG	540
GGAGTATGAT TACTTATGAG GAAGTAGATG TTGATGAAGA TGAGTTGACA GGTCGTAGAC	600
GTTCAAGTAA GAAAAAGAAG AAAAAACAT CATTTTACC TTTATTTTAT TTTATCCTGG	660

(2) INFORMATION FOR SEQ ID NO: 247:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1805 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 247:

1269

CCGGTTGCAC AGGATCGTGC ATAGTCAACT CTTCAAGTAT AGCATATCTC CTATTTTCTT	60
ACAAGTAATA ACACCTAAAA TGAAGCTTTT TCTTTTACTT TTTTCTGCCA AGAGGCAAAA	120
AGCATGCTGA GGTAAAAAAC GCTCATCATA ATAGGAACAC CAAGAATGGT CTTTTCATGA	180
TAGAAAATCG TCAAATAGGC TGAAAAGACA ACGCCAAGGA CAAAACACT AAGCAGGCTA	240
ACAAATATGA ATCCTTCACG CAAAAAGGA GTGTGCTTGG TTCGGAAATA ATCTCCAAAA	300
GCCAGCATGG TCCGTTTGAT ATTCCCTGTC ATAAAAGCGT TATTATAGGC AATACCCGAC	360
ACTTCTCCAA AAGCAGTTGT CACCAGTCCC ATACAGAAGG CCAAGGGCGG CACTAGATAG	420
ATATTATCCA CAGTTTGCGG CACAAAAGCA ATAATGATTG ATAAGATTGC CAAGGGAATC	480
AAGGACAGAA TAGGTTTTTT CACAATCTC AATTTTCTCT TATAAATCGT TAATAAAAAG	540
ACTCCCATCA TAAACGCTAG CAAGGTGAGA ACCTTGTCCT TAACATCCGA AACATTATTT	600
TTAATTAATT CTAAGTAAAG AAAGACAACA TTTCCAGTTT GTCCAGCTAC AAGGGTATTC	660
CCGCGAACAA TAAAAGTGTA AGCATCCACA TATCCAGCAC AAAACGTCAA AAAAAGTGCT	720
AACCTTTTAG ACTGACGTGA TATTTTCTCT ATAGGTAATA ACCTCATTTT ACCTCCCATT	780
GTATTTTCTC TTAGAAATAT TGTACCATT TCTTTCTAAA AAATCGTAGG CTACCATTTA	840
GATTTTACTA TTAGCATAAA AATAATAATA GACAACTATT TATCCAAAA TAGATAGATG	900
TAACATGTTT GCAAACAAAG CATACGAACC TTTAGTAAAA TCATTTCCAT GAAACTAGAA	960
TAGAGCCCTC TTAGCAAAAA TCATTATTTT AATTATTTC TAATCACTCC TTGACATAAA	1020
TAACCTCTAC CAATAAAGA CTATGTCTTA AAAAAATGGT ATAATAAAT CAATACTTGG	1080
GCTTGATGGC TAGGCTACTA ATAACAATTA GGAGAGAAAA TCAGGCACTT GTTAACAACA	1140
AGGATTATCC CCTTGAGATG AAAGGAACTT TAGAAATCTT ATGATGAACA TGCAAAACAT	1200
GATGCGTCAA GCACAAAAAC TTCAAAAACA AATGGAACAA AGCCAAGCTG AACTTGCTGC	1260
TATGCAATTT GTTGGCAAAT CTGCTCAAGA TCTTGTCCTA GCGACCTTAA CTGGCGATAA	1320
GAAAGTTGTC AGCATTGATT TCAATCCAGC TGTCGTTGAC CCAGAGGACC TTGAGACTCT	1380
TTCTGATATG ACCGTTCAAG CCATCAACTC TGCTCTTGAA CAAATCGATG AACTACCAA	1440
GAAAAAATG GGTGCTTTTC CTGGGAAATT ACCTTTCTAA AAACAAGGAG CTAGAACAAT	1500
GCTTGTCGAT AACAAAGGCT AAGAAAGGTG CAAAAATGAC TCTATAATAT TTGTAGTGGG	1560
TAAATCCCTT ATGGATATTA TGGAGCCTAT TTTTGTGTAG AAAAAAGTCC CATATGACCT	1620
ATAATGAAAA GCGACAAAAC AACTCATTAG AAAGAATCAT ATGGAACAAT TACATTTTAT	1680
CACAAAATTA CTAGACATTA AAGACCCTAA TATCCAGATT TTAGACATCG TCAATAAGGA	1740

1270

TACACACAAG GwAATCATCG CCAAACCTGGr CTATGAAGCT CCATCTTGTC CTGAGTGCGG 1800

AAGTC 1805

(2) INFORMATION FOR SEQ ID NO: 248:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2516 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 248:

CTGCATCTAG TTTGTTTCTC CCTACAGTTT TAGCTAGACA GATTGGAGAT TATGATTTAA	60
CGTCGCCCGC TTGGGGTTCG GATACAACCTA GTGAGCTTGA GAAAGAAAAC TCCTCTGCTG	120
GAATTAATAA TAATGACAGC ACTGGTGGCG GTAAAAGGTT AAATACCTCT ATTCGTAGCG	180
CCTATAGTGG GTCAGATATT ACCCCGGTAT ATTCATTGGG GTCTGGCTCT AGGATTGTCA	240
TGTACTATAA TGGAGGTGGT GACAATTATA TTGGTTCTGG TACTAGATTA GCTATGGCGC	300
CACAATTTGG AAATCATGTA AGAATTCATA CTTCAGGTTT TTGGAATCCA GATTCTTATT	360
AACTTACTTG TCAGAGTAAG CCTTAAAGAT GGTGATTGTT GGGTGTAGCA TGAAAAAGA	420
ATGCTACACC CTATTTTAT TATAAGGAGG AGTAAGGATG GAATTTTCA TTTGTAATCT	480
TGTACGAGTC GTTCAATCAC CTCGATTTTA TATGTCTTTA TTTTGGACCC TTCTTTGCAT	540
GAGTTTAGGA AATTTCTTGG CTTTCAATGG TATTTATAAA ATTGAAGGTT TATCGATTTT	600
TTTGGCCGCT TCTTCTATTC GAGGATTTTC ACCGATTAGC CTAGTAGCTG CACTTATCTG	660
TACACTGCCC TATTCTAGTC AGATAATAGA GGATGCTGAG AGTCATTTTC TAACAGCACA	720
ATTGTGTCGA ATTTCTAAAA AGAAGTATCT GGCTATTGTG GGTAGTACTG TAATTATTTT	780
TTCTTTTCTA GTCTTTTTC TCCCCTATTT ATTATTATTA GGAATTAATC TTTTAGTGAC	840
TCCTTATCAG GAAATTATA TTGGAGATTA TAGTGGTGCC TTAAGAAGAT TATTTGATTC	900
CAATCAGTTT CTCTATAGTC TTGTAACGAC TCTCTGGTAT GGAGTTTGGG GCGCTGTGTT	960
CTCTATTTT GGACTAGCTA GTGCTTTGCT AGTGAAGAAA AAAATAGGAG CTATTTTCAT	1020
CCCAGTTGCC TATATGATGG TTGGTGGTAT TTTTGGGCT ATTTTAGGGC TATCTTACTT	1080
AGAACCTGTG ACAACGCTAG CTTTGGGATA TCAGAAAGAT ATCAGTCTTT CCTTAGTTAG	1140
TGCTCATCTT GCTTTTATTT TATTTGTTAG TTGTTTGGTT GTTTATGGTA CATTTTTTCT	1200
ACATTCAGAG GACTATGTAT AATGAAACAA TTTGTTCAAT TTTATAAAAA AGATTTCTTA	1260
GCAGTATTGG TTTATTTTAT ATTACTGCTA TCCTGTGTTT TATCTAGTAC AGTATATTTA	1320

1271

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TTGCGCtGTC GCCAATATTC AATCCATCCA AATGTATTAG AATGGATCTT AGTTTACTT 1380
CAAGATATGA CGACTGGAGT ATATTGCTTT CCGTTCACAT ATATATTGTT CTTTTTTTAT 1440
TTGATGAATA ACTATTTTAA TAGGTTGGAG TGTGCGATTC GTCTGAAATC AATTAAGCAC 1500
TTTACCAGTT TTAGTTTCAA ATTAGCAGCT CTTAGTACGG GGATTGAC GCGGACTTTA 1560
TTTTTATTGA TTTTCTAAT TGCATTTAGT AATGGTTTTA GCTTCTCTTT GGAGATAAAG 1620
GAGGTTGATT TTTTAAGAGA ATTTTATGGT ATAAGTATTG CAAACAATGC TAGTTCTTTT 1680
ATAGGATTTT TTTTCTCTTA TATAGCATAC TATTTCTTTT TATCCTTACT TACTATTAGC 1740
AGTTTCTTCT GGTTAAGAAA ATCAAACATG AGCTTAGTAT TTCTGTTTAC TTTTTTATTT 1800
GTAGAATCCT TATCTGGAT TTATCAGTTG GACAATGGGA TAATTGGATT ATTGCCAATT 1860
TTTCAGTATA TGGTAAATTC CAATCCGTAT GCATTGATTT ATTGGCTTAC ATTACTATCT 1920
ATCATAATTC CATTGACTGT ATTTTCTGTT CATAGAACT GGAGGAGAGT GTAAAAGTTG 1980
GAAATGGGAA AGTTAAGTAG TCACATGTGG AGGTTGAATC AGATAATCTA TACCAAGTAC 2040
TTTTGGGGTT ATGTTCTTTT TTGGATATTG ATTTGTTTAG GATTATGGTA TTGGTTAGAA 2100
GGAAATGATA GACTTGTTAT AGAAATTTTA AAAGGCCTA ATCTGAGTCA AACTCTTTT 2160
TTAGTCTTAT CTATATGGTT GCTTCATTGG TTTATTATTC ATACATTTTT TCTAGCAGTT 2220
GTATATCGTA GAAGAGCATC CGATTTCTTT ATGGAAGTGA TTCGATTTT TCTATTAAG 2280
CTCTGGATTA GGTATCAGAT TTGGACCTGT TTTCTTTATG GACTCATTTT AATCATGGTA 2340
AAAGTTCTAG TGATTCAATT TATGTTACAG TTACCAAAT GGGATATAGG AGTTTGTGTT 2400
ATAGTTGATT CTTGAATGC TTGTGTGTTA GTCTTGTTTT GCTTTATGTT ATACGCACTA 2460
GGAGCGAATG TACAAATGAA CTTGCTTGC GTTAGTTTCT TTTTACTCAT GATTGG 2516

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(2) INFORMATION FOR SEQ ID NO: 249:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1364 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 249:

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CGGTGTTTTT TTGTAAATTT TCTAGCACTT GTATGGTAAA ATAGATACAG GTGTTTATTA 60
AACTAGACTA AAAACCTATT TAAGCAGGCA AAATGAAGAA ATACCAACAA TTATTTAAGC 120
AAATCCAAGA AACCATTCAA AACGAGACTT ACGCTGTCGG AGATTTCCTT CCTAGCGAGC 180

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1272

ACGACCTTAT GGAGCAATAT CAAGTGAGTC GTGATACCGT CCGAAAGcCC TGTCTCTCCT	240
CCAAGAGGAA GGATTGATCA AAAAGATAAG AGGGCAAGGT TCTCAAGTCG TCAAAGAAGA	300
AACCGTCAAT TTCCCTGTAT CCAACCTAAC CAGCTACCAA GAACTAGTTA AAGAACTTGG	360
ACTGCGCTCT AAAACCAACG TGGTCAGTCT GGACAAGATT ATTATTGATA AAAAACTCTC	420
ACTGATAACC GGTTCCTCCAG AGTTTCGGAT GGTTCGGAAG GTGGTCCGCC AGCGTGTGGT	480
GGATGATCTG GTATCCGTTT TGGATACGGA CTATCTGGAT ATGGAACCTA TCCCAAATCT	540
CACTCGCCAA ATTGCTGAGC AGTCTATCTA TTCTTATATA GAAAATGGCC TCAAACCTCT	600
TATTGATTAT GCTCAGAAGG AAATCACCAT TGACCACTCA AGCGACCGAG ACAAGATTCT	660
CATGGACATT GGCAAAGACC CTTATGTCGT TTCGATTAAA TCAAAGTCT ATCTCCAAGA	720
CGGACGCCAA TTTCAGTTTA CCGAAAGTCG CCATAAGTTA GAGAAATTTA GATTTGTAGA	780
TTTTGCAAAA CGCAAGAAAT AAAAGACTGA GACACCAGAT CTCAGCCTTT TTCGGCTCTA	840
TAATATTTGT AGTGGGTAAC CCCCTATGG ATATTATGGA GCCTATTTTG TGTAAGAAAA	900
AAGTCCATA TGACCTATAA TGAAAAGCGA CAAAACAACT CATTAGAAAG ATTCATATGG	960
AACAATTACA TTTTATCACA AAACCTGCTCG ATATTAAAGA CCCAAACATC AAGATTCTAG	1020
ACATCATCAA TATGGATACC CACAAAGAAA TTATCGCTAA GCTGGATTAT GAGGCTCCAT	1080
CTTGCCCTGA TTGTGGAAGT CTAATGAAGA AATATGACTT TCAAAAACCG TCTAAGATCC	1140
CTTACCTCGA AACAACTGGT ATGCCTACTA GAATCTCTCT TAGAAAGCGT CGTTTCAAGT	1200
GCTATCATTG TTCTAAAATG ATGGTCGCTG AAACCTCTAT CGTCAAGAAG AATCATCAAA	1260
TTCCTCGTAT TATCAACCAA AAAATTGCGC AAAAGTTGAT TGAGAAGATT TCTATGACCG	1320
ATATTGCTCA TCAGCTGGCC ATTTCAACTT CAACTGTCAT TCGG	1364

(2) INFORMATION FOR SEQ ID NO: 250:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1227 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 250:

CCATGAAGAC CGCTTGAAT TGGAATGGCA CAAGTCTTTG TTGAATGGTC TATTCCTATT	60
GACAATCGGT GGAGGAATTG GACAATCTCG TATGGCCATG TTCCTACTTC GCAAGAGACA	120
CATCGGAGAA GTGCAACAAA GTGTTTGCC TCAAGAAGTC CGCGATACTT ACGAAAATAT	180
TTTGTAGAGA ATCGAACCGC AAGGTTGGT TTTCTTTCTC TTTTGTCTA TAATTGGTA	240

1273

TAATAAACAG TATGAAAATC GTATCAGGAA TCTATGGGGG ACGTCCCCTC AAGACACTAG	300
AAGGCAAGAC GACAAGACCT ACTTCGGATA AGGTTAGGGG AGCCATTTTT AACATGATTG	360
GTCCCTACTT TGAAGTGGGA CGAGTCTTGG ACCTTTATGC AGGTAGTGGT GGTTTATCTA	420
TCGAAGCAGT ATCGCGTGGC ATGTCCAGTG CTGTTTTGGT GGAGCGAGAC CGTAAGcTCA	480
GACCATCGTG GCTGAAAATA TCCAGATGAC CAAGGAAGTT GGAAAATTTC AACTCCTCAA	540
GATGGATGCA GAAAGGGCAT TGAACAGGT ATCTGGGGAA TTTGACCTCG TTTTCTTAGA	600
CCCTCCCTAT GCCAAGGAAC AAATCGTAGC AGATATTGAA AAAATGGCTG AGAGAGAGCT	660
TTTTTCTGAA GATGTTATGG TTGTGTGCGA GACGGATAAA GCCGTTGAAC TTCCAGAAGA	720
AATTGCCTGT CTGGGTATCT GGAAGGAAAA GATTTATGGA ATTAGTAAGG TGACAGTCTA	780
TGTCAGATAA GATTGGCTTA TTCACAGGCT CATTTGATCC GATGACAAAT GGGCATCTGG	840
ATATCATTGA ACGGGCGAGC AGACTTTTTG ATAAGCTTTA TGTGGGTATT TTTTMTAATC	900
CCCACAAACA AGGATTTCTC CCTCTTGAA ATCGTAAACG GGGGTTAGAA AAGGCTGTGA	960
AACATTTGGG AAATGTTAAA GTCGTGTCTT CTCATGATAA ATTGGTGGTC GATGTCGCAA	1020
AAAGACTGGG GGCTACTTGC CTAGTGCAGG GTTTGAGAAA TGCCTCGGAT TTGCAATATG	1080
AAGCCAGTTT TGATTACTAC AATCATCAGC TGTCTTCTGA TATAGAGACT ATTTATTTAC	1140
ATAGTCGACC TGAACATCTC TATATCAGTT CATCAGGCGT TAGAGAGCTT TTGAAGTTTG	1200
GTCAAGGATAT TGCCTGCTAT GTTCCCG	1227

(2) INFORMATION FOR SEQ ID NO: 251:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3652 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 251:

CCGGTCAAGT TAAAAACGCT ATTTCTTCCC ATTTTATTTA TTTTITAGGA GTGGTAACGT	60
ATCAAAATAG CCCAAGCGTT CTCACCCGTG TGAGTTTGAA TAATGGAACC CGTTTCCAAA	120
ACAGAAATTG GCTTTTCAAC ATAAGCTTGT AAGCTTCTT TCATCTCTTT TGCCCAATCA	180
TCACTACCAG AATATGAAAT TCCAATCTCT GCTACAGCAC GTTCAGAAAG CGATGTTATC	240
AACTCATCTA ACCATTTTTT AAATGTTTGA GTTCCACGAC CTTTAACCAT TGGCTGCAAT	300
TCATGGTCTT TCATTTGCAT GACAGCACGG ATATTGAGAA GAGAGCTCAA CAAGCCAGTT	360

1274

ACACGGCTAA TTCGTCCACC TTTGACAAGA TTTTCCAAAG TTGAAACACC AATATAAAGC	420
TCTGTATGGT TTTTAACCTC TTCTACATGA GATAAAATTG CCTCCATATC TTTACCTTCT	480
TGAGCTAACT TCGCAGCCTC AACCAACTTGG AATTTCAAGG CTGGTCACT GAAGGAACTA	540
TCAACAACAG TCACATCTGC AGTAGATAGG CTAGCACCTT GGCGTGCTGC TTCTACCGTA	600
CCCGAAAGAG CATGGGACAT ATGAATAGCA AGAATCTGGC CACCATCTTT GCATAGGTCT	660
TCAAAAATCT CAGCAAAGAC ACCTACAGGT GGCTGACTTG TTTTCGGAAG ATTCTTACTT	720
TCTTGCATCA ACTGAAGAAA TTTACCTTCT TCTTTCAAAT CCGCATCAGA ATAAACAACA	780
TTATCAATCA TTACAGATAA TGGAACAATT GTAATATCTA ATTGCTTTAC TAGTTCAGGT	840
TCAATAGTAA CAGATGAATC GGTTACAATC TTAATTTTTG TCATAGTATC AATCTTTCTA	900
TTTTAGGATT CAGATTGGTT TCCTTACTTC TAATTATATC AAAAAAAGA TTA AAAATCC	960
TAATGGAGTC AATCAAATTT TCCGTAAAT TTGATATAAT CAACTTATAA GAAAAGAGGT	1020
GTCCTATGAT TAAAAAATT TACCCCATTT TTACCATTTT ACTAGGTGCT GCTATTTATG	1080
CTTTTGGAAT GACTTATTTT GTAGTTCCCC ATCATCTCTT TGAAGGAGGG GCGACAGGCA	1140
TTACCTCAT CACCTTTTAT CTTTTTAAAA TCCCTGTTTC CCTCATGAAC CTGCTGATTA	1200
ATATTCCCCT TTTTCATCCTA GCTTGAAGA TTTTGGAGC CAAATCCCTC TATTCTAGTT	1260
TACTAGGAAC CTTAGCTTTG TCCGGCTGGT TAGCTTTTTT TGAGCATATT CCCCTTCATA	1320
TTGATCTTCA AGGTGATTTA CTAATCACAG CCCTTATAGC GGGAATCCTA TTGGGAATTG	1380
GCCTTGAAT TATTTTTAAT GCTGGAGGTA CAACTGGCGG AACTGATATT CTAGCTCGTA	1440
TTCTCAACAA ATACACTCAT ATATCCATAG GAAAACGCT CTTTATCTTA GATTTTTGTA	1500
TTCTCATGTT GATTCCTCCTA ATCTTCAAGG ATTTGAGATT GGTTCCTAC ACGCTTTTGT	1560
TTGATTTTAT TGTTCCTCGT GTTATTGATT TGATTGGTGA AGGAGGATAT GCCGGCAAAG	1620
GCTTTATGAT TATCACAAAA CGTCCTGACC AACTTGCTAA GGCGATTAAT GATGACCTCG	1680
GAAGAGGTGT TACTTTTATT TCTGGTCAAG GCTACTATAG TAAAGAAAAT TTGAAAATCA	1740
TCTACTGTAT TGTCGGAAGA AATGAAATTG TGAAAACGAA GGAAATGATT CATCGAATCG	1800
ATCCTCAAGC CTTTATAACT ATTACAGAAG CCCATGAAAT CCTAGGAGAA GGCTTCACCT	1860
TTGAAAAAGA ATAAAAAGAG GTAATGTCGT GACCTCAAAA GTTAGACTAA ATCATCTATC	1920
TTTTGGGTTA CAGACAACCT CTTTTTATT TTATTTACTC AAGCTCTTAA GACCAATTCC	1980
GAGTTACTTC TTCATCAGCC TTTAACTGAT CCACTAATTG GTCAACTGAG TCAAATTTGG	2040
TCATATCTCG AATGCGATCA AGCCAATAAA CCATGACGGT TTCCCCATAA ATATCTTGAT	2100
TAAAATCAAA AATATTGACT TCAAAACGTG CTCTTCTCC ATCAAAGGTC ACATTTTCC	2160

1275

CGACACTAGC CATAGCACGA TACTTCTGTC TTTGAATCTC AACATCAACA ACATAAACGC	2220
CATCTGCTGG CATATAAGTA CGGTCTAAAA GCACTAAATT CGCTGTCGGA TAACCAATTG	2280
TACGACCACG AGCATTACCA TGAACCACCA TACCTCTTGA TGAAGCGGT GGGGGGAAAA	2340
GTTTTCTGTC TTCTTTCACA TTTCCATCTA AAATAGCTTG ACGGATACGA GTTGAACATA	2400
TCTTTCCTTT CTCATCTTCT ACAGGTGGAA CAATGATAAC TTCTCCATCA AAGTAATTCT	2460
TTAAATCTTC TGCTGTTTTT TTGTCAGAAC CAAATGTATA ATCAAAACCT GCAACAATAA	2520
TTTTGGCATT CATAGCCTTG ATATAAGTTG CAAAGAATTC TTGTGCAGTG AACTAGCGA	2580
ATTGACTACT AAAATCAAGG AGATATAATT CTCTACACC TTCGCGCTTT AATTTTCTTT	2640
CACGTCAGC AGGGTTCAAA ATATGCAAAA ACAATCTGG ATGATAAGGC TCTAAAGCGA	2700
TCTTTGGAGA TTCATTAAAG GTCATAACGA CGATAGGCAA CAAATCCTTT CTCGCAGCCT	2760
TGTTGGCAAC ACGAAATAAT TCTTGATGCC CTTATGTAT GCCATCAAAA TAGCCGAGAA	2820
CAACGACTGA ATCAGATGGT GTGCCAATAT CTTTTTGTT TTTTATAGGA ATAGTAATAA	2880
TCATAAAATA ATTATATCAT AGCGATAGCT ATTTCTGGAA CAGAAAATCT GAAATGTTGT	2940
TTTTTTCACA TGAAGTGAC CTGTTTTCAA AAAGCACTTT ATTCTATCGT TGCTTAACATA	3000
TGAACTTTGC AATATTCTTC TCAAAACTT GTAGGACATC TTCAAAATTT TGCAAGGAGT	3060
GATTAGACTT GTTCGGTAAC CATAAAGTGT CATACTATGC TTATGTATGA AAAAGCAATG	3120
CAACTAACTC CTGAGAACTT TAAATTACTA ATTGGTGCCG AAAAGGTAGA ATTTAGAATC	3180
GAGGTACACC TATGGCTGTA AAATTTACAA AATGAGACAA CTTGGGCAAG ATGTTTGAAG	3240
AATTTCTTAA ACTCCCTGAT TTGAAGCAAG TCACTTTCCC TAATGACAAA GAAAAAGCC	3300
AAAACAGCAA AGAAAACTA GATGACTGCT TTCCAACAAC TCCCATCTAG TGTGCTTCAG	3360
ACTGGGCTAT TTTTCTCTCC ATCTGTTAGC TTGGATTCTC AGACCGTTTC AGCTAAAGAA	3420
TATCTTTTCC CTTATCAGAA GGAACGGCTC AAGCCATTCA GACAAGTGAA GGGACGACAA	3480
GCCAATATTT GAAACCAGAT AGCAGTTCTT ATAGTCAATT GAAATAAAAT CTGAAGAAAT	3540
CGAGTAGGAA ACTCATATCA ATGTTTAAAC GTGTTCTATT CCAGATTCAT ACTCAATGAW	3600
AATTAAAGTG CAAACTAGGA AGTTAGCCGC AGGTGATACT TTGGGTACGG CA	3652

(2) INFORMATION FOR SEQ ID NO: 252:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 743 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

1276

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 252:

GTACCGTGGT GCCAAAGTAC AGCAAGGTTG GCTTTTGGAC AAACAATACC AATCTTGGTT	60
TTACATCAAA GAAAATGGAA ACTATGCTGA TAAAGAATGG ATTTTCGAGA ATGGTCACTA	120
TTATTATCTA AAATCCGGTG GCTACATGGC AGCCAATGAA TGGATTTGGG ATAAGGAATC	180
TTGGTTTTAT CTCAAATTTG ATGGGAAAAT GGCTGAAAAA GAATGGGTCT ACGATTCTCA	240
TAGTCAAGCT TGGTACTACT TCAAATCCGG TGGTTACATG ACAGCCAATG AATGGATTG	300
GGATAAGGAA TCTTGGTTTT ATCTCAAATC TGATGGGAAA ATAGCTGAAA AAGAATGGGT	360
CTACGATTCT CATAGTCAAG CTTGGTACTA CTTCAAATCC GGTGGTTACA TGACAGCCAA	420
TGAATGGATT TGGGATAAGG AATCTTGGTT TTACCTCAAA TCTGATGGGA AAATAGCTGA	480
AAAAGAATGG GTCTACGATT CTCATAGTCA AGCTTGGTAC TACTTCAAAT CTGGTGGCTA	540
CATGGCGAAA AATGAGACAG TAGATGGTTA TCAGCTTGGG AGCGATGGTA AATGGCTTGG	600
AGGAAAAACT ACAAATGAAA ATGCTGCTTA CTATCAAGTA GTGCCTGTTA CAGCCAATGT	660
TTATGATTCA GATGGTGAAA AGCTTTCCTA TATATCGCAA AGTAGTGTCT TATGGCTAGA	720
TAAGGATAGA AAAAGTGATG ACA	743

(2) INFORMATION FOR SEQ ID NO: 253:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 4010 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 253:

TTTTGGTTGA TGATACGAGG GATTTGGTGA TTCTTCTTGA CGATAGAAGT TTCAGCGACC	60
ATCATTTTTG AACAGTGATA GCACTTGAAT CGACGCTTTC TAAGGAGAAT TCTAGTAGGC	120
ATACCAGTCG TTTCAAGATA AGGAATTTTA GAAGGTTTTT GAAAGTCATA TTTCTTCAAT	180
TGGTTTCCGC ACTCAGGCA AGATGGGGCG TCGTAGTCCA GTTTGGCGAT GATTTCTTG	240
TGTGTATCCT TATTGATGAT GTCTAAAATC TGGATATTAG GGTCTTTAAT GTCTAGTAAT	300
TTTGTGATAA AATGTAATTG TTCCATATGA TTCTTTCTAA TGAGTTGTTT TGTCGCTTTT	360
CATTATAGGT CATATGGGAC TTTTTTCTA CAATAAAATA GGCTCCATAA TATCTATAGT	420
GGATTTACCC ACTACAAATA TTATAGAACC GAATTAATTT AATTAGAGAG CCAACTTTCT	480
AATATAGTAA TCGCGTCATA ACAAGGTATC TATCATTCAT GGAGTTCCTC CTGTATACTA	540

1277

TTAGTAAAGT AAAACTATTG GAGGATATTT TAATGCCACA ACCTATTGTT CCTGTAGAGA	600
TTCCACAATC TCGTCGTTTT GATTCTAAAA AGAGAAATGA TATTCTGCTT AAAATTCGTA	660
TTGGCAAGCT TGAAGTAAGT TTTTTCAT CTCTCAATCT CGAAATGGTA GAACAGCTTT	720
TGGATAAAGT GTTGCTCTAT GACAATTCAT CTATCTAGCC TAGGGCAGGT CTATCTCGTA	780
TGTGGGAAAA CGGATATGAG GCAAGGCATT GATTCATTGG CTTATCTGGT TAAAACCCAC	840
TTTGAATTAG ATCCTTTCTC CGGTCAAGTT TTTCTCTTTT GTGGTGGACG TAAAGACCGC	900
TTTAAAGCCC TTTACTGGGA TGGTCAAGGA TTTTGGCTAC TATATAAAGC CTTTGAGAAC	960
GGAAAAGCTA CTTGGCCAG TACAGAAAAG GATGTCAAAG CTCTCACACC TGAACAAGTA	1020
GATTGGCTTA TGAAGGGCTT TTCTATCACT CCAAAAATAA ATTTATCAGA AAGTCGTGAT	1080
TTCTATTGAA ATGAGGACTT TCTTTTGTAGT TATAATAAAG TTAGGAAATA AGGAGAGGAA	1140
GCCCATGGAA GAAGATTGAA AATCATTCAA CAACAGAGTG CTACAATTGA TAGTCTCACC	1200
AATGAACCTG CCCTTCTTCG TGAACAAGTG GCTTATCTAA CGCAAAAGCT CTATGAAAAA	1260
TCCTCTGAGA AAAGTGTGTTG CCCATCTGGA CAACTCAGTC TTTTGAAGA GGAACAAAAT	1320
ATGGAAGAAG ACTCTGACTT ACCCAGTTGA AAGAGAAGAA ATCACCTATA AACGTAAGAA	1380
AGCTAAAGGG AAACGTCAAG CTCTTCTTGC CCAATTTGAT TCAGAAGAAG TTCATCATCA	1440
AGTAGAAGAG AGCATTTGCC CTGATTGTCA GGGAGATCTA AAAGAGATTG GAGCAACCCCT	1500
TCAACGACAA GAATTAGTCT TTATTCCTGC GCAATTAAAA CGAATAGATC ATATCCAACA	1560
CGCTTATAAG TGCCAAGCAT GCAGTGATAA AAATCCGAGT GATAAAATCG TGAAAGCTCC	1620
TATTCCTAAA GCCCCTTTGG CGCATAGCCT TGGCTCAGCT TCTATTATCG CTCACACCAT	1680
CCATCAGAAG TTTAATCTGA AGGTACCCAA TTATCGCCAA GAAGAAGATT GGGCTAAGAT	1740
GGGTTTACCA ATCACACGTA AGGAAATTGC TAATTGGCAT ATCAAGGCGA GTCAATACTA	1800
TTTGAGAGCC CTTTATAATC TTTTACGAGA AAAGTTGTTA GAACAAGCTC TTCTTCATGC	1860
GGATGAAACC TCTTATCGGG TTCTAGAGAG TGATAGTCAG TTGCCTTACT ATTGGACTTT	1920
TTTGTCTGGG AAAGCTGAGA ATCAAGCAAT CACGCTGTAC CACCATGATC AGCGTCGGAG	1980
TGGTTTAGTA GTACAAGAAT TCCTAGGAGA TTATTCTGGC TATGTTTCATT GTGACATGTT	2040
GCGGCAGTAA CTTAGGACTT TAGTCCTCTA GTTCTGCCTA TGCGATAGCA GTCCAAGGTT	2100
TAGGAGTAAG GCGACGCTAA GCTTGGTAAA CTGCGAACAG CTAGAAGCTT ATCGTCAACT	2160
GGAAGAAGCT GCACTTGTTG GATGTTGGGC GCATGTGAGA AGGAAGTTTT TTGAAGTGCC	2220
CCCCAAGCAA GCAGATAAAT CATCCTTAGG AGCTAAAGGT TTAGCTTATT GTGATCAGTT	2280

1278

ATTTTCCTTG GAAAGAGACT GGGAGGCTTT GCCAGCTGAT GAACGACTAC AGAAACGTCA	2340
AGAACATCTC CAGCCCCTAA TGGAAGACTT CTTTGCTTGG TGCCGCCGTC AGTCAGTTTT	2400
AGCAGGTTCA AAAGTAGGAA GGGCAATTGA ATACAGCCTC AAGTATGAAG AAACCTTTAA	2460
GACTATTTTG AAAGACGGAC ATCTGGTCCT TTCCAATAAT CTAGCTGAAC GCGCCATTAA	2520
ATCATTGGTT ATGGGACGGA GTAAAAGAGT CCAGTGGACT CTTTTAGCCT GAGCTCAGTT	2580
TAAAAAGCG AGGGTGGTTA TTTTCTCAA GTTTTGAAG AGCTAAAGCA AGAGCTATTG	2640
TTATGAGCTT GTTGAAACA GCTAAACGTC ATCAATTATA GTGCGTTGAA TCTATAACAG	2700
TACGCATCGA CTGCTAAAC ATTTCTATAA ATCAATTTTC CTTTCCTAAT CGATTTGTTC	2760
ATATCTTATT TCAATCCATT ATAAATAGCG AGAAATATCT ATCCTATCTT CTAGAATGTC	2820
TTCCAAACGA GGAAACTCTC GTAAACAAAG AGGTTTGA GGCCTATTTA CCGTGGACTA	2880
AAGTTGTACA AGAAAAGTGC AAATAAGAAA TCTCCAGATT AGGAACTATC CGTGAGTTCT	2940
CTAGTCTGGA GATTTTTCAA TAGACTTCGT TATTGGACGG TTACAATTTA TTATATGAAA	3000
ATCCCATATT ATTCTCCAAT TCTATATTTT ACCTTTCTAA ATGTATAGAT TAACTACCTA	3060
ATTATAGCAT ATAACGCAGA TTCCTTTCAA TCGTATGATT TACTGCATTA AATTAAGTAA	3120
AAAAATAAAG GCAGTCCGAA GACTGCCGAT ATTTATCTCT CATCTCTTTA ATTATGGTAA	3180
GTAAATAAAT AATTTCCCTA AAGATATGGA AATTATTAAT ACTATAATA CATATTATAA	3240
AGTTTATAAA TACTGTAAAA ATCCTGAAGT TAATTTTCTA ATAAATATCA ATATGTGTTA	3300
GTATCTTTTA AATTTTGA CAATTTACTA GTTCTATAGA CATGTTTAAAC AGACTCTATT	3360
TTACAATTCA AAAATTTTCA CTGCCACTTC ATTTAAAAAT TCTATATCAT GGGAAACAAT	3420
AAAAATTATT TTATCCATGG TTTTATACTT ATTAATCAGT TCAGATATTT TTATCATATT	3480
GGAATAATCC ATACCACTTG AAGGTTGTC AAAAAAGACA AATGGAGAAT TCTTGACAT	3540
AACAGATGCT ATTGCAAGCC TTTGCTTTTG CCCTCCTGAT AAACATCATG GATGCCPTTC	3600
AATAAATTCG TCCAGGCATA AATCTTTTAA CCCAAATCAT TCATACCTCT CTCAACTAGA	3660
TGTAACCTAC AAAACCCCTG ACCTCATGAG CCACTTTCTT CCTCCTCATG AGGTCAGTTT	3720
TACTTTCTGC TGTTCAGTA TCGTTTTC TCGCTAGATT TCCTCAAAAG GGCAGACTCC	3780
TCCCTTGGTT CGTCACACGA TTTTTCATC TCGACTGTTC TTTAATGCAT CATTAACGAC	3840
GCTTTTCTTC TAGGTGGTTC ATAAGGAACA GGAAGATTCA GGTTGACTTT TCTAATCCTA	3900
GAATAAAGTG CTGAAAACAA TTCGGAATAG GCATAGAGAC TAGACAATTT GAGGAGCTGC	3960
TTGCGTCTCG TTCGAACACA TTTTCCCACC ACGTGAAGAA AAAGATGGCG	4010

(2) INFORMATION FOR SEQ ID NO: 254:

1279

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 2789 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 254:

ATGCATCCGT TTGTCAAGCC TAAATTGTAA TTTTTCCTCA TTTAAAACAG AAAAACCAG	60
GAAAATGACA TAAAAATATC ATTCCTAGGC CTATTTATGC TATTTCTCTC TGAAAAATAT	120
GAGTATTCAG TCGGTCAAAT GAAGCTGAAC GAACTCATTT TCCCTCGCCT AATCAATGA	180
TTCGATGACA TTGTTGGGCT ACATAAGCAT CGTGGGTCAC GATAATGACT GTTTTCCCCT	240
CTCGATTCTAT CTCTAAGAGA AACTTCAAGA CCAAATCTCT ATTTTCAGGA TCCAGAGAAC	300
CTGTCCGGTTC ATCGGCTAAA ATCAGCTGGC TGGGTTTAA GATGGCTCTA GCAACTGCAA	360
TTCGTTGTTG TTCGCCCCCA GACAACTCGG AGACCTTTG ATGCAAAGTA GCTGATAAAC	420
CTACTCTCTC TAAAATCTCT TCCACCTTTT TGAGCTTGTC TTTCTTAGGC AATTTACAT	480
ATTTTCAGCGC CACATGAGAT TGTACTCGAC CGTTTCATCA TCAATCAGGG CAAAATTTTG	540
AAACAGATAA GAGATATGTT CACGGATTAT TGTTTGGCAG TTAGCAGAAT TAACCGCTAG	600
ATTTGTCTGA CCAAAAATCT CATACCGTCC GCTATAATCA CCATCTATCA AACCCAATAA	660
ATTTAACAAG GTCGACTTCC CACTACCACT CTTACCAACA ATAGCTACCA AATCCCCCTG	720
ATCAATCCTG AGAGATAAGT TATCCAAAAT CACTTTTCCC CCAATGGTTT TGGTAATATT	780
TTTCAACTCA ATCATAAGAT GCCCCTTTT AATAACTCTA CTAGACTTCT TTTCTCCATC	840
CTAGAAGCTA AGCCTAGCAC AAATAGTATA TCCAGACATG TAAAACCTGC AAACAGTAGA	900
AGTGGTAAGA ACGCATGGGC AAAGAAAATC AAGACTAGAA GAGGGAACT ATAGCCCAGC	960
AAGAGCAGAA CGAGGAGAGG ACGGTAGCGA TCGACCAGTT TCCACCCCAT AAATCTCTTG	1020
GTAATGATAT CCTGCGCTT CAATAAGAAA GTTGTACTA GTAAGAAGTA GGAAATCATC	1080
ATGCTAAGGA GACCAACAA AGCAAAGAGT AGGTTAAAAT TCCGAACAGC ATCTCGATAA	1140
GAATCCACTT TCTCTTGTG AATGGCTTGA ATAGATGAAA ATTTTAAATA ATTTCCATCT	1200
GACAATTTCT CAACTAACTC TGTAATCTCT TTTTGATGTT GAACCGTATT TTCAATTTTA	1260
ATCGGATTAT TTAAGCCAGT TGTTGACAGG GAGGCTTTCT CATCCCACAT CATATCAGAA	1320
TCATTGACCA AGCTAATAAT TGGATTGGAG AGATTTTCCT TTCGCTTATC ACTATATGGG	1380
AAAAATGACC AATCTCCTTC ATAATAGGCA ATCTCGACAT CCATCTCCTC TATCGTTTCGT	1440

1280

TTTTGCTGCT CTTCATACTT CATCGAATGA AAGGCAATTA ACTTCCCCAA GAGCTGATTT	1500
TTATCTTCTT CACCTTTCGT ACTTGCTGGC ATCAAAATAA CTTTTTTAAT ACCGGTATTT	1560
GGTAGCTTGA ATCCCTTGCT CTTTAGAAAA TTGCGATTGG CATAGTAAAC ATCCACCGTA	1620
TCTGTAACT GATATTGCTG AATCTGTTCT GATTGGACAA AATTTTTTAC AGGAAGACTG	1680
CTACTCTGCA CATAGCCCGC CTGCGTTTTT TCTACCAAT CCTGATAAAA TCGATAGAAA	1740
TAATCTGTAG ATTTCCCTGA CCCTGCTAGC TCTTCTTGCC ACAGATTATC ATTGAGTTTG	1800
AAGGTTTCTA AGGTCAGGTA ATTACCTTGA CTTACCCACT GTTGCTGATA AGCAAGTTCT	1860
TTGTTTTCTT GTTCTAACT TCTGCCCACC CCAATCAGTA AGGCCGTCAG TAAAATAGTT	1920
GTCCCTATTT TCATCACATA ATTGAAGATA AGACCAAAAT TGAAAGATGA AAAACCTTTC	1980
AGCAGAGAGC TGATTGTCAT TTTTGGATT AAGAGGTAAG TCAACCAACT GATAAAGAGA	2040
TAAAGCTGCA ACAGCAAAAA ATGAGACAAC CACAGCATAG GAAACAAATC TTTTGGCTTA	2100
TAATCAAGCA AGAAAAACAC GCCTAGATTG ATCACAAGAG CCCACCTAG GAGGAGGTAA	2160
AGGTTGCTT TTACAACATC AGCTAAAACA GCCCTATCTT GAAAACCAAG TAATTTTTGT	2220
ACCCCAACTC TTTTCATCTC CATCATCGGT TGATACACTG TCACTAACAC AAGAAGCAAA	2280
ATAGCCAAGA CAAAAACAAT GGCAGATAAA AGCAAATCTC GATTTATGAC TTCCACTGCA	2340
CTTTGTAGG TCGGCTCTAG CAAGGTAGCC TGGTCTATCT TGAAAAATC GCTCCATTTT	2400
TGTACAATCC TATCCTTGTC CATCTCTTGT GTAGAAGTTA TCGTATAGCG ACCATTTAAA	2460
CTACGAGATG TATCCTTGAT ATAGGTTTGA AAAGTCATAA GCTGAATAGG TTTGGCTTTT	2520
AGAAAGGTCG GAATCGTACC AAGTTTATTG GAAATTTCTT TATTACTATA GACTCCTTCA	2580
CCATCTGTGG TAAATCAAG AGAAGAAATC CCAAATCTT GGTAGGGGAA GGTATCTTTA	2640
TCAAAACAC CAGACTTGAC CACCTCATCA CCACTGTCTG TTTTGATGAT GGAGACTTTA	2700
TACTCCTTTG ATACATCCTC AAAAAATCGA AGAACAGACG CTGCAGGTTC GTTAATATCT	2760
TTCAAATACA AATCCAAAGA ATCTACAGG	2789

(2) INFORMATION FOR SEQ ID NO: 255:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2495 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 255:

CTGCGAATTT TATTAAAGAT AATGTGTTAA TTACAGCGGC TCACAACTAC TACAGACATG 60

1281

ACTATGGGAA AGAAGCGGAT GATATTTATG TTCTTCCGGC TGTTAGTCCA AGTCAAGAAC	120
CATTTGGAAA GATCAAAGTA AAGGAAGTTC GTTATTTGAA GGAATTTAGA AATTTAAATT	180
CTAAGGATGC AAGGGAATAT GACTTGGCTT TATTAATTCT AGAAGAGCCC ATTGGTGCAA	240
AATTAGGGAC TTTGGGTCTT CCTACTAGTC AAAAAAATTT GACAGGAATA ACTGTGACTA	300
TCACAGGCTA TCCATCATAT AATTTTAAAA TTCATCAAAT GTATACAGAT AAGAAACAAG	360
TTTTAAGTGA TGATGGCATG TTCTTGGATT ACCAAGTTGA TACTTTAGAG GGGTCTAGTG	420
GATCTACAGT TTATGATGCT AGTCACCGTG TAGTAGGAGT GCATACTTTA GGAGATGGAG	480
CTAATCAAAT TAACAGTGCA GTTAAATTAA ATGAACGAAA TTTGCCATTT ATTTAwTCGG	540
TTCTTAAAGG TTA CTCTCTT GAAGGATGGA AGAAAATAAA TGGTAGTTGG TACCATTATA	600
GACAACATGA TAAACAAACG GGTGGCAGG AGATAAATGA TACCTGGTAT TATTTAGACA	660
GTTCCGGTAA GATGCTTACA GATTGGCAAA AAGTCCATGG AAAATGGTAT TATCTCAATT	720
CAAAATGGAGC AATGGTTACA GGTAGCCAAA CTATCGATGG TAAAGTTTAT AACTTCGCTT	780
CATCTGGTGA GTGGATTTAA TGTTGGAGGA TATATAAAAT GAAGCTTTTG AAAAAATGA	840
TGCAAAATCGC ACTAGCCACA TTTTCTCTCG GTTTGTTAGC GACAAATACA GTATTTGCAG	900
ATGATTCTGA AGGATGGCAG TTTGTCCAAG AAAATGGTAG AACCTACTAC AAAAAGGGGG	960
ATCTAAAAGA AACCTACTGG AGAGTGATAG ATGGGAAGTA CTATTATTTT GATCCTTTAT	1020
CCGGAGAGAT GGTGTCTGGC TGGCAATATA TACCTGCTCC ACACAAGGGG GTTACGATTG	1080
GTCCTTCTCC AAGAATAGAG ATTGCTCTTA GACCAGATTG GTTTTATTTT GGTCAAGATG	1140
GTGTATTACA AGAATTTGTT GGCAAGCAAG TTTTAGAAGC AAAAAGTCTG ACGAATACCA	1200
ACAAACATCA TGGGAAGAA TATGATAGCC AAGCAGAGAA ACGAGTCTAT TATTTTGAAG	1260
ATCAGCGTAG TTATCATACT TTA AAAACTG GTTGGATTTA TGAAGAGGGT CATTGGTATT	1320
ATTTACAGAA GGATGGTGGC TTTGATTTCG GCATCAACAG ATTGACGGTT GGAGAGCTAG	1380
CACGTGGTTG GGTTAAGGAT TACCTCTTA CGTATGATGA AGAGAAGCTA AAAGCAGCTC	1440
CATGGTACTA TCTAAATCCA GCAACTGGCA TTATGCAAAC AGGTTGGCAA TATCTAGGTA	1500
ATAGATGGTA CTACCTCCAT TCGTCAGGAG CTATGGCAAC TGGCTGGTAT AAGGAAGGCT	1560
CAACTTGGTA CTATCTAGAT GCTGAAAATG GTGATATGAG AACTGGCTGG CAAAACCTTG	1620
GGAACAAATG GTACTATCTC CGTTCATCAG GAGCTATGGC AACTGGTTGG TATCAGGAAA	1680
GTTCGACTTG GTACTATCTA AATGCAAGTA ATGGAGATAT GAAAACAGGC TGGTTCCAAG	1740
TCAATGGTAA CTGGTACTAT GCCTATGATT CAGGTGCTTT AGCTGTTAAT ACCACAGTAG	1800

1282

GTGGTACTA CTTAACTAT AATGGTGAAT GGGTTAAGTA ATGAAGGCTA ATTGTAACT	1860
GTGATGGATA CTTAACTTTG TATAATAGGT GGATAAAAGT CTTCACAATC AAAAAACGCA	1920
TAGTATCAAG GTTTTCTGT ACTGCCCTCA AACAGTTAGA CAATTAATTT ATCCGAAGgA	1980
TTTAGTTCTG TATTGCACAG GGCTAAGTCC TTTTAGTTTT ACCTTAATTC GTTTATTGTT	2040
GTAGTAATCA ATATAGTCTA TAATGGCTTG TTCCAATTGC TTAAGCGACT GAAACGACTT	2100
CTCATAACCG TAAACATTT CCGATTTTCA AATCCCAAAG AAGGACTCCA TCATACTATT	2160
GTCTGGGCTG TTTCCCTTAC GTGACATGGA TGCTTGAATT CCCTTACTCT CTAGGAACCG	2220
ATGATAAGAA TCGTGTGGT ATTGCCAGCC TTGGTCACTA TGGAGAATCG TATTCTCGTA	2280
GTGCTTCTCT GTGAATGCCT GTTCCAACAT TGTTTGTACT TGTTCTAAGT TGGGTGAAGT	2340
TGAAAGATTA TAGGCGATAA TTTGCTATT AAAGCCATCT AAAACTGGTG ATAAGTAAAG	2400
CTTTTGAGTA CTTGCTGGAA TGGCAAATC TGTCACATCT GTGTAGCACT TTTCCATTGT	2460
TTTAGAGCCT TCAAATTGGC CTGAATGAG ATTCG	2495

(2) INFORMATION FOR SEQ ID NO: 256:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 870 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 256:

TACCACCGTA TTCATCCAGC AAGATTGCCA TTTGTCTTTG GGTATTTTCGC AGTTCTTTTA	60
GCAAGTCATC CACAAAAATA GTTTCAGGTA CAAAAAGTGG ATCTTGTAAG ATTCTCTTCC	120
AAACAATATT GTCAAAACCG TCCACAAAGC CTGCCTTAAG GAGACTCTTG GTGTGAATGA	180
TTCCAATTAC ATTGTCCTTA TCCCCATCAT AAACCGGAT ACGAGAATAA TTTTGTTTTA	240
AAATACTTTG GATAATGGCT TGAATATCAT CCTGAATATC CACCATAAAG GCATCCGTTC	300
GAGGAACCAT AACCTCTCGT GCCATCAGTT CATCGAGCGA AAAGACACCT TGTAGCATCT	360
CAATCTCATC AGCATCCAAT GTTCTTTCAC TATTTGTCAG CATATAGGCA ATTTTCATCAC	420
GGGTCATCTT TTCATCCGCA TCATCGAATG ACATAGGAGT CAAATGGCTC AAGAAATTGG	480
TCGAAGCAGC TAAAAGCCAA ACAAAGGAC TGAATAGTTT TCCGATCCCA ATGATAATCG	540
GCGCTGTACG AATTGCCAAG GCATCCTTTA GATTAAAGAGC GATTCTCTTA GGATATAATT	600
CCCCAAAAAC GATGGAAATA TAGGTCAAAA ATGCCAAGGA TAGAAAAGTT GCCACGGCTT	660
GTGCTGTTTC GCCATTCCCA AGCCAAGAGG CAATCACACG TCCTAGAGTA TCAGTTAAAC	720

1283

TCGCCCCTGA TAAGATTGTA ATCAGGGTGA TTCCTACCTG GATGGTTGAT AAAAAGTGGT 780
TAGGATTTTC TAGTACCTTC AGCAGGCGGA TGTAGCGTCT GTCTCCTTCT TCCGCCTTTT 840
GTTCAACTCG GGCACGATTA AGAGAAACGG 870

(2) INFORMATION FOR SEQ ID NO: 257:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 1245 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 257:

CGTTCCAGAG AGCCCGCATT CTCATCGCCA ATGTCGTGAT TGATTTGGCC CTTTCTCCAA 60
AATCCAACTC AGCCTATGTA GCTATGGATA AGGCACTTGC TGACCTCAA ACATCAGGGC 120
ACTTGCCAT TCCGCGACAC CTGCGTGATG GGCACACAG TGGAAGCAAG GAACTGGGGA 180
ATGCCAAGA CTATCTCTAT CCACACAACT ATCCTGGAAA TTGGGTCAAG CAAGACTATC 240
TGCCAGAAAA AATTCGTAAT CATCACTATT TCCAAGCAGA AGATACTGGT AAATATGAAC 300
GGGCTTTGGC TCAAAGAAAG GAAGCTATCG ACCGTTTGCG AAAAATCTGA AATCCTTTTC 360
AAAAAATGCG ACTTTCCTCT TGATTTTTTT TGAAAAAGTG GTATCATATA AATATAGAAA 420
CGCTGTGGTG TACGACTTCA CACTTAAGTG TTGACCGACT ATTTTTTGTA TTATTAGGGA 480
AACAAAAGTC TTCTAACAGC ATGTAGGCCG TCTCACACGG AAACAGCTTC AGTTAGAGCG 540
AGTTGCCAC CTGCTTAATT GCGCGGGTTC AATACAAACC GTGAAGTTTC GGCACCAATA 600
CAGCTTTTTT CTTTGCCTCC TTAGCTCAGC TGGCAGAGCA GCGGACTCTT AATCCGTGGG 660
TCACAGGTTG GATCCCTGTA GGGGGCATAT AAATACAACA GGAAAAGCCT TATAATATAG 720
GGCTTTTTTT GCTTTCCTTT TAAAAATTGT CGTGCAATTT GCCGTGTTTT TACAACAAAC 780
TTTTACAGC CATAAACTCC TCACTAATTT TTTCTCCAA GGTATGCCCA TAAACGTCAA 840
TCAACATGGA GATATCTTTA TGTCTAAAA TTTGGCTCTT TGTCAACTGT AGTGGGTTGA 900
AGTCAGCTAA GCTCGAGAAA GGACAAATTT TGTCTTTCT TTTTGTATAT TCAGAGCGAT 960
AAAAATCCGT TTTTGAAGT TTTCAAAGT CCGAAAACCA AAGGCATTGC GCTTGATAAG 1020
TTTGATGAGA TTATTGGTCG CTTCCAATTT GCGGTTAGAA TAGTGAGTT GAAGGCGGTT 1080
GACGATTTTC TCTTGTCTT TTAGAAAGGT TTTAAAGACA GTCTGAAAA GAGGAGGAAC 1140
CTGCTTTAGA TTGTCCTCAA TGAGTCCGAA AAATTTCTCC GGTGCCCTAT TCTGAAAGTG 1200

1284

AAACAGCAAG AGTTGATAGA GCTGATAGTG ATGTTTCAAG TCTTG 1245

(2) INFORMATION FOR SEQ ID NO: 258:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1684 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 258:

ATGCCTATGT AACTCCACAT ATGACCCATA GCCACTGGAT TAAAAAAGAT AGTTTGTCTG	60
AAGCTGAGAG AGCGGCACCC AGGCTTATGC TAAAGAGAAA GGTTTGACCC CTCCTTCGAC	120
AGACCATCAG GATTCAGGAA ATACTGAGGC AAAAGGAGCA GAAGCTATCT ACAACCGCGT	180
GAAAGCAGCT AAGAAGGTGC CACTTGATCG TATGCCTTAC AATCTTCAAT ATACTGTAGA	240
AGTCAAAAAC GGTAGTTTAA TCATACCTCA TTATGACCAT TACCATAACA TCAAATTTGA	300
GTGGTTTGAC GAAGGCCTTT ATGAGGCACC TAAGGGGTAT ACTCTTGAGG ATCTTTTGGC	360
GACTGTCAAG TACTATGTCG AACATCCAAA CGAACGTC CGATTTCAGATA ATGGTTTGTG	420
TAACGCTAGC GACCATGTTC AAAGAAACAA AAATGGTCAA GCTGATACCA ATCAAACGGA	480
AAAACCAAGC GAGGAGAAAC CTCAGACAGA AAAACCTGAG GAAGAAACCC CTCGAGAAGA	540
GAAACCGCAA AGCGAGAAAC CAGAGTCTCC AAAACCAACA GAGGAACCAG AAGAATCACC	600
AGAGGAATCA GAAGAACCTC AGGTCGAGAC TGAAAAGGTT GAAGAAAAAC TGAGAGAGGC	660
TGAAGATTTA CTTGGAAAAA TCCAGGATCC AATTATCAAG TCCAATGCCA AAGAGACTCT	720
CACAGGATTA AAAAATAATT TACTATTTGG CACCCAGGAC AACAATACTA TTATGGCAGA	780
AGCTGAAAAA CTATTGGCTT TATTAAAGGA GAGTAAGTAA AGGTAGCAGC ATTTTCTAAC	840
TCCTAAAAAC AGGATAGGAG AACGGGAAAA CGAAAAATGA GAGCAGAATG TGAGTTCTAG	900
TTCTCATTTT TTTCATGAAA ATGTGCAAAA TATAGTAGAT TGAAACTAGA ATAGTATACC	960
TCTACTTCTA AAACATTGTT AGAAATCGAT TTGACTGTCC TGTTCCTATT TCATTTTACT	1020
ATATCTTAAC AGATAGTGTA AATAAAGATA AACTATTTAC TGGCTAATTA ATCAGTTAAA	1080
CACTAGTTAA GGAGTAATGA TGAAAAAAG AACAATACTA TTATTGATGG CCAGTCTGTT	1140
AGCTCTTGTC TTAGGAGCAT GTGGTTTCTT GGACATATTG ATCCTGGATC ATTCTCATCA	1200
GGATTACTCT TTACTGCTAT TTTAGAACT GGGGTGGTTT GATGGAAAGT ATTGGTCTTG	1260
TTATCGTTTC ACATTCCAAA CACATTGCAG AAGGTGTTGT TGAACGTATT AGTAAAGTAG	1320
CTAAAGATGT TCCGATTACT TATGTAAGAG GAACCGAGGG CGGAGGAATT GGAACGAGTT	1380

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TTGAACAAGT AGATAGGGTT GTTCCGAAA ATCCAGCAGA TACTTTACTT GCCTTTTTTG	1440
ACCTAGGTTT TGCTAAAAATG AACTTAAAAA TGGTGACTGA TTTCAGTGAT AAAAGTATCA	1500
TCATCAACAG GGTTCCAATT GTAGAAGGTG CCTATAATGC AGCTGCTCTT CTTCAGGCTG	1560
GTGCAGAACT GTCAGTTATT CAAACACAGT TaGCGGAgCt TGAAATCAAT AAATAAGGAA	1620
TTTTACTATA ACTCTTTTTA TAGATAAGCT ATTGaTTATC TCAACTATAA TAATGTTAAG	1680
TnAA	1684

(2) INFORMATION FOR SEQ ID NO: 259:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 970 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 259:

AGGAGTGGAG AnATATGAAG ACACAAATTT TCACATTATT GAAAATCGTT GCTGAGATTA	60
TTATTATTTT GCCATTTCTA ACTAATCTAT AAGTTCTTTA TATTGCTGAA AACGCAATTC	120
AAAAAGGGCT ATTAATTGTG GATTTTCTAA TACCTGCAGA GATTGGATAA AGCGTTCAAT	180
CTCTTTTTGA TTGCTTCCCT TTGTTTGAAG AAAGACACTC ATCTTCTTTA AAAATGCCA	240
CGATACTTTT TCAAAAACAT CATACGGTCG TAACATCCTC TCCAACTCGG CTTGGAAGAT	300
TGGGATGTAG GAGAAAAGTT TTCGCTCCAT GAGTTCTGAT AAGATATTTA AGAGTCCTTG	360
CTTCATATAC AATCGATTGT GTACTAACTC TTAAATTCTT TTGGATTTTT CGAGTAAGGA	420
GGTTGATAAA AAAATCAGAT CTTGATTGCT CAAGAAGGGC ATGGTATTGC AAAAGAGATA	480
GAGTTCAAAC CAGGTCCAAG ACTCGATAGC ATAGAGATAG GTGGTCAAAA ACTCGCTATC	540
CTCCTCTGCT AGTGGGTAGC TTTTATTTAG TGAATGGATG GCATCTTTAA TCACGATGGC	600
ATTCAAACGA CGATAGGTCT GCGCCATCTG TTCTTGATCG ACTTCCTCCA ATAGCTGCTC	660
TAAAGCAGCT ATATCCTGAT GGGCAAAGCG ATTCACAACC TTTCGACCGA TTCGCATATG	720
TGGAGATTCT TGATAGTTGT TGAGCTTGTG CCCAACTCA TCAAAGGTCA CATTTATACC	780
TTGGATAGCT AGAATCAACT TATCCGCAGA CAGCATAGAC TGCCCTAGTT CAAACTTGGA	840
CAACTGAGAA GCTGTTAGAC CCTCACAAGC CACATCTGAC TGCTTGAGCT TTCTCGCCAA	900
ACGTAATTCC TTGTAAAAT CCCCCAGTTC CATTCCTCTA ATCATCTGAC CACCTCCTAG	960
CTTTTGCAGG	970

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(2) INFORMATION FOR SEQ ID NO: 260:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 2996 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 260:

GTTGACCACG GGTAAACTA CCCTAACTGC AGCTATCACA ACTGTTTTGG CACGTCGCTT	60
GCCTTCATCA GTTAACCAAC CTAAAGACTA TGCCTCTATC GATGCTGCTC CAGAAGAACG	120
CGAACGCGGT ATCACTATCA ACACTGCGCA CGTTGAGTAC GAAACTGAAA AACGTCACCTA	180
CGCTCACATC GACGCTCCAG GACACGCGGA CTACGTTAAA AACATGATCA CTGGTGCTGC	240
TCAAATGGAC GGAGCTATCC TTGTAGTAGC TTCAACTGAC GGACCAATGC CACAAACTCG	300
TGAGCACATC CTCTTTTCAC GTCAGGTTGG TGTAAACAC CTTATCGTCT TCATGAACAA	360
AGTTGACTTG GTTGACGACG AAGAATTGCT TGAATTGGTT GAAATGGAAA TCCGTGACCT	420
ATTGTCAGAA TACGACTTCC CAGGTGACGA TCTTCCAGTT ATCCAAGGTT CAGCACTTAA	480
AGCTCTTGAA GGTGACTCTA AATACGAAGA CATCGTTATG GAATTGATGA ACACAGTTGA	540
TGAGTATATC CCAGAACCAG AACGTGACAC TGACAAACCA TTGCTTCTTC CAGTCGAGGA	600
CGTATTCTCA ATCACTGGAC GTGGTACAGT TGCTTCAGGA CGTATCGACC GTGGTATCGT	660
TAAAGTCAAC GACGAAATCG AAATCGTTGG TATCAAAGAA GAAACTCAAA AAGCAGTTGT	720
TACTGGTGTT GAAATGTTCC GTAAACAACCT TGACGAAGGT CTTGCTGGAG ATAACGTAGG	780
TGTCCTTCTT CGTGGTGTTT AACGTGATGA AATCGAACGT GGACAAGTTA TCGCTAAACC	840
AGGTTCAATC AACCCACACA CTAAATTCAA AGGTGAAGTC TACATCCTTA CTAAAGAAGA	900
AGGTGGACGT CACACTCCAT TCTTCAACAA CTACCGTCCA CAATTCTACT TCCGTACTAC	960
TGACGTTACA GGTTCATCG AACTTCCAGC AGGTACTGAA ATGGTAATGC CTGGTGATAA	1020
CGTGACAATC GACGTTGAGT TGATTACCCC AATCGCCGTA GAACAAGGTA CTACATTCTC	1080
TATCCGTGAG GGTGGACGTA CTGTTGGTTC AGGTATGGTT ACAGAAATCG AAGCTTAATT	1140
CGATTTAGTT CCCAGAAGAA CAATTATTTA AGTTAGACAC TAAAAGAATC TTGCTTGGA	1200
AGGTTCTTTT TTTAGATATT GAACTAATAC TCAATGAAAA TCAAAGAGCA AACTATAATA	1260
TATTGAAACT AGAATAGTAC ACATCTACTT CTAAAACATT GTTAGAAATC GATTTGACTG	1320
TCCTGATCGA TTTGTCTGT TCTTATTTCA TTTTACTATA GAAAGTTAGC TACAGACTGC	1380
TCAAAACATT GTTTTtaggt TGtagataga ACTGACGAAG TCAGLAACAT CTATACGACA	1440

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AGGCGAAGCT GACGCGGTTT GAAGAGATTT TCGAAGAGTA TAATACTAGA CTAAAATCAA	1500
AAAGCATTAT ACAATAGTAA TATGAAATCA ATTAAAGAAG AAATCCAAAC CATCAAAACA	1560
CTTTTAAAAG ACTCTCGTAC AGCTAAATAT CATAAACGCC TTCAAATCGT TCTATTTTCGT	1620
CTGATGGGCA AATCTTATAA AGAGATTATA GAACTTTTAT AGTGGTTTGA AATAAGATGT	1680
GAACAACTCT ATCAGGAAAG TCAAACATAA TTATAGAAAT ATTTTAGCAG CCAAGGTGTA	1740
CTGTTATAGA TTCAATACAC TTTAGACTGT AATCAAAACA CGATTTGGCG AAATGTAAAA	1800
AATATGAGGA GTTCGGACTC GACTCTCTCC TTCAAGAAAC ACGTGGTGGT CGTAACCATG	1860
CTTATATGAC GGTGAGCAA GAGAAAGTCT TTCTTGCCCG CCATTTGAAG GCTACAGAGG	1920
CAGGAGAATT TGTTACAATT GATGCCTTAT TTCAGGCTTA TAAAAAGGAG TTAGGTCGTT	1980
CCTACACACG TGATGCCTTC TATCAACTGT TGAAGCGCCA TGGTTGGCGA AATATTACGC	2040
CACGTCCAGA ACATCCTAAG AAAGCAGATG CTCAACCAT TGTCGCGTCT AAAAAATAAG	2100
TCTCAATTCA AGAAGACAAG TGAAGTGCAC CCCAAAAGTT AGACAGAAAA AATCTAACTT	2160
TTGGGGTGTT TTTATTATGA AATTAACTTA TGATGATAAA GTTCAGATCT ATGAACTTAG	2220
AAAACAAGGA TATAGCTTAG AGAAGCTTTC AAATAAATTT GGGATAAACA ATTCTAATCT	2280
TAGGTACATG ATTAAATTGA TTGATCGTTA CGGAATAGAG TTCGTCAAAA AAGGAAAAAA	2340
TCGTTACTAT TCTCCTGATT TAAAAACAAG AATGATTCAT AAAGTCTGAC ATGAAGGCTG	2400
GACTAAAGAT AGAGTTTCTC TTGAATACTG TCTCCCAAGT CGTACGATAC TTCTTAACTG	2460
GCTAGCACAA TACAGGAAAA ACGGGTATAC TATTGTTGAG AAAACAAGAG GGAGAGTACC	2520
TGAGAGCGGA GAATGCCATC CTAAAAAAGT TAAGAGAACT CCGATTGAAG GAGGAAAAAG	2580
AGAAAGAAGA AAGACAGAAA TTATTCAAGA ATTAATGACT GAGTTTTCGT TAGATATTCT	2640
TCTAAAAGCC ATTAAACTAG CTCGTTTGAC CTACTACTAT CACTTGAAAC AGCTAGATAA	2700
ACCAGATAAG GACCAAGAGC TTAAAGCTGA AATTCAATCC ATTTTATTCG AACACAAGGG	2760
AAATTATGCT TATCGTCGGA TTTATTTAGA ACTAAGAAAT CGTGGTTATC TGGTAAATCA	2820
TAAAAGAGTT CAAGGCTTGA TAAAAGTACT CAATTTACAA GCTAAAATGC GACAGAAACG	2880
AAAATATTCT TCTCATAAAG GAGACGTTGG CAAGAAGGCA GAGAATCTCA TTCAAGGACA	2940
ATTGAAGGC TCTAAAACAA TGGAAAAGTG CTACACAGAT GTGACAGAAT TTGCCG	2996

(2) INFORMATION FOR SEQ ID NO: 261:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 837 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double

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(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 261:

CTTATCAACT CCCGACATGG CTCTCAGACC AATCCAAATC CCTAAAAAA TCAGAACAAG	60
GATGGTGGTC AAGATCAAAC TCTCGAAATA TAAAGAAAAT AGTTGCAGTA GCATGATTTT	120
TCTCATTTCT ATCTTTTTTA AAGAGTAAAC TCAGCTAGTC CAACTAACTG AGTTTTCCTT	180
TATCTATTAT ATCAAATATA AGTCCGTTTG TAACTAGCGA AGAATTCCTT TGTCCGCTCT	240
TCTTTAGGGG TGTGGATAAT CTCATCCGGA GTTCCAGACT CGATGATTTT CCCCTTATCT	300
AAGAAGAGAA TTTTATCCGC AACTTGGGCT ACAAAGGACA TGTCATGACT GACCAAAATC	360
ATGGTCTGAC CTGACTTAGC AGCATCTGCA ATAGACTTTT CTACTTCACC GACCAATTCT	420
GGGTCAAGGG CTGAAGTTGG TTCGTCTAAG AGCAAAACAT CTGGTTTCAT AGCAAGCGCA	480
CGCGCTAGGG CAACCCGTTG CTTCTGTCCA CCTGATAAAT GGCGAGGATA ATGGTTTTC	540
CGGTCCGAAA GCCCAACCTT AGCCAACTCT TCCTTGCGAA TCTTAGTCGC TTCTTGGTCA	600
GATAATTTCT TGACAACAAC CAAGCCTTCT TTCACATTAT CAAGTGCTGT TCGGCGTTCA	660
AACAAATTAA ACTGTTGGAA AACCATAGAC AACTTACGAC GTAGGGCAAG GATTTCTTCT	720
TGAGTGATTT TAGAAAAATC AACTGAAAAA CCATCAATCT GAATAGAGCC ACTGTCAGGT	780
GTTTCTAGAT AATTGAGACT GCGAGAAAGG TTGATTTTCA GCTCTGAAGA CCAATCA	837

(2) INFORMATION FOR SEQ ID NO: 262:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 868 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 262:

CCGAACAAAA TGGGCTAATT AGATTATAGT AAGAAAGGTA AGTTAAAAAT GAGAATTGCA	60
ATTGGATGTG ACCACATCGT AACTGATGAA AAAATGGCGG TTTCAGAATT TTTGAAATCA	120
AAAGGATATG AAGTCATTGA CTTTGGTACC TATGACCATA CACGGACTCA CTACCCAATC	180
TTTGGTAAAA AAGTAGGGGA AGCTGTAAC AGCGGTCAAG CTGATCTTGG AGTATGTATC	240
TGTGGTACTG GTGTTGGTAT CAACAACGCT GTAAATAAAG TTCCAGGTGT TCGTTCTGCC	300
TTGGTTCTGT ATATGACAAC AGCCCTTTAT GCTAAAGAAC AATTGAACGC TAACGTTATT	360
GGTTTTGGTG GTAAATTAC TGGTGAATTG CTTATGTGTG ATATCATCGA AGCTTTCATC	420

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CATGCTGAAT ACAAACCAAC TGAAGAAAAC AAAAAATTGA TTGCGAAAAT TGAACATGTT	480
GAAAGTCACA ATGCTCAACA AACAGACGCA AACTTCTTTA CAGAATTCCT TGAGAAATGG	540
GATCGTGGAG AATACCACGA CTAAGAGGTG ACCTATGATT TTAACAGTCA CAATGAACCC	600
ATCCATCGAT ATTCCTATC CCTTGGATGA GTTGAAGATT GATACTGTCA ATCGTGTGGT	660
GGATGTAACC AAAACGGCTG GTGGTAAGGG ACTCAATGTT ACCCGAGTAC TTTCAGAATT	720
TGGCGATTCT GTTCTTGCTA CTGGTTTAGT GGGTGGCAAA CTTGGTGAGT TTTTGGTTGA	780
ACATATCGAT AATCAAGTAA AGAAAGATTT CTCTCAATT AAGGGAGAAA CTCGTAAC TG	840
TATCGCTATT CTCCACGGAG ACAACCAA	868

(2) INFORMATION FOR SEQ ID NO: 263:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3744 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 263:

CCGTTCAAAG TCTTCATAAG ACTCGAAAGT CACAGTTCTT TCGTTCTTGC TGGCATCTAT	60
ATAGGTAATT TCAATCATGT TTAATACTCC TTTGTTTAAT GCTAACTTTA TTTTACTCCT	120
TATAAAGAG AATGTCAAGA AAAATGATTG CGCACGCAAC TTTTTTTAAA ATCATCTTAA	180
ATCAAGAAAT CCAAACCTGC TTCCAAGCTT TCTTCGACAG TCTTTTGTAG CGAGGCCAGT	240
GTCTTTTGCC CATCATTTGT CAGGCAGATA AACTAGAGC GTCTATCTTG ATGGCAACAC	300
ATGCGACTGA GTAGACCGCA ATTTT TAGCT TCCAAGCGAG CCACCATCCT AGAAACTGCG	360
CTCGGGCTCA GATGAAGCTT ATCTGGCAGG TCAATCTGGC GTAGAGATTT TTCTTCAGCC	420
AAGTCCAGAT AGTAGAGCAG GTAGAACTCT TTCAAGGTCA GACTTTGCTC GCTCTGTTGG	480
GCAATGGTCT CTTCCAAGAG ACTTTCAATT TCTTTCTGAC GCCGATTGAA GTCAAACCAT	540
TTTTCCAAAT AGGTCATAGT GTCTCCTTTC TTTT TAGAGT CATAAATAGA AGAAAGTCCA	600
TTAACGGGCA GTCTCTGCGT CACAAGATGA TTGCGCATGC AATAATTATA CTACTTTTCA	660
AGAATGCTGG CAAGCTCTGT TTTT TAGTGG TTTTATTTT GTGTGAATAA TGGGGGAATC	720
CTATTGTTTC AATTCTAAC TCCTTATCAC ATTGGAATC AGATTTTATT TCATTCTCT	780
ATCTATAGTT GCTTAGTTTA AAATAAGCAT GGTCTAATAA AGCTATGCAT ATAGTACTGA	840
TTTTAAACAA GGAGCATTAG ATTCCATTAA AGGAGGGCAC AGACATGTCG AGGCGGCCAA	900

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AGTTTTTGAT GTCGGCGTCA GAACTCTCTT CACGTGGGAA AAGAAAGACG TAAACAAGGG	960
AACTTAGAGC GGAAAAAGCG AGTCGTCAAA AAGCGTAAGA TCCCTTTAGA AGAATTGAAA	1020
GCCTTTGTAG AGGCTCATCC AGACGCTTTT TTACGGGAAA TTGCGGCCCG TTTTGATTGT	1080
GCTTTGCCCT CCGTATGGGC AGTTTTAAAG CAGATTAAGG TCATTTTAAA AAAGACGACC	1140
AGTTTTAGGG AACAAAAGCC TGAGAAAGTT TCTGAGTTTC TTGATATTTT GGATAACCTA	1200
AAAGATTTAC CAGTCCTATA TATTGACGAA ACGGGAATCG ACCGCTACCT CTATCGTCCT	1260
TATGCAGGGG CTCCTAGAGG GGAGAAAGTC TATGGCAAGA TTAGCGGACG GCGTTTTGAG	1320
CGGACTAATG AGGTGGAGCA AAAACTCAAT GGTAGTTTTC TAATCAGATA TATTGATTCA	1380
CAAATTAGAG AATGAAAGAA TAATTATGCA TAAAAATAGG AATATAAACC AAAAATTAGC	1440
TGATTTATAC TCATTTGCGT GTCTTTATAA AAAACTTATC TTATAATATA TATATATATA	1500
TATACAAAAT AGTAAAATGC TTTTTTTTTT TAGCAAAAAT ACCTCAAGTT TCTTGCTATT	1560
TTGGGTTCCC TATCTATAA TTATAGTATG GTAATTATT TATATCCATA CATGAAAATA	1620
ATACTCGAAA GGAAATTTC AATATTTTT TAGACGTCAG AAGGGTGAAT ATAGAGAAAC	1680
AGACCGAGTA ACTCGGTTCA AATTAATCAA ATCAGGGAAG CATTGGCTAC GGGCCTCGAC	1740
TTCTCTTTTT GGCTTGTTA AGGTCTTGGC AGGTGGTGT GATACTACTC AGGTCATGAC	1800
CGAAACGGTA GAAGATAAAG TAAGTCATTC AATTACTGGG CTTGATATCC TCAAGGGGAT	1860
AGTTGCTGCG GGAGCTGTCA TAAGTGGAAC CGTTGCAACT CAAACGAAGG TATTTACAAA	1920
TGAGTCAGCA GTAGTTGAAA AAAGTGTAGA GAAACGGAT GCTTTGGCAA CAAATGATAC	1980
AGTAGTTCTA GGTACGATAT CTACAAGTAA TTCAGCGAGT TCAACTAGTT TGTCAGCTTC	2040
AGAGTCGGCA AGTACATCTG CATCTGAGTC AGCCTCAACC AGCGCTTCGA CCTCAGCAAG	2100
TACAAGTGCA TCAGAAATCAG CAAGTACATC GGCTTCGACA AGTATTTCTG CATCATCTAC	2160
TGTGGTAGGT TCACAAACAG CTGCCGCTAC AGAAGCAACT GCTAAGAAGG TCGAAGAAGA	2220
TCGTAAGAAA CCAGCTAGTG ATTATGTAGC ATCAGTTACA AATGTCAATC TCCAATCTTA	2280
TGCTAAGCGA CGCAAGCGTT CAGTGGATTC CATCGAGCAA TTGCTGGCTT CTATAAAAAA	2340
TGCTGCTGTT TTTTCTGGCA ATACGATTGT AAATGGCGCC CCTGCAATTA ATGCAAGTCT	2400
AAACATTGCT AAAAGTGAGA CAAAAGTTTA TACAGGTGAA GGTGTAGATT CGGTATATCG	2460
TGTTCCAATT TACTATAAAT TGAAAGTGAC AAATGATGGT TCAAAATTGA CCTTTACCTA	2520
TACGGTTACG TATGTGAATC CTAACAACAA TGATCTTGGT AATATATCAA GTATGCGTCC	2580
TGGATATTCT ATCTATAATT CAGGTACTTC AACACAAACA ATGTTAACCC TTGGCAGTGA	2640
TCTTGGTAAA CCTTCAGGTG TAAAGAACTA CATTACTGAC AAAAATGGTA GACAGGTTCT	2700

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ATCCTATAAT ACATCTACAA TGACGACGCA GGGTAGTGGG TATACTTGGG GAAATGGTGC	2760
CCAAATGAAT GGTTCCTTTG CTAAGAAAGG ATATGGATTA ACATCATCTT GGA CTGTACC	2820
AATTACTGGA ACGGATACAT CCTTTACATT TACCCCTTAC GCTGCTAGAA CAGATAGAAT	2880
TGGAATTAACT TACTTCAATG GTGGAGGAAA GGTAGTTGAA TCTAGCACGA CCAGTCAGTC	2940
ACTTTCACAG TCTAAGTCAC TCTCAGTAAG TGCTAGTCAA AGCGCCTCAG CTTCAGCATC	3000
AACAAGTGC GTCGGCTTCAG CATCAACCAG TGCCTCGGCT TCAGCGTCAA CCAGTGCCTC	3060
AGCTTCAGCA AGTACCAGTG CTTCAGTCTC AGCATCAACA AGTGCTTCAG CCTCAGCATC	3120
GACAAGTGCC TCGGCTTCAG CAAGCACATC AGCATCTGAA TCAGCGTCAA CCAGTGCTTC	3180
GGCTTCAGCA AGTACCAGTG CTTCAGCTTC AGCATCAACC AGCGCCTCGG CCTCAGCAAG	3240
CACCTCAGCT TCTGAATCGG CCTCAACCAG CGCCTCGGCC TCAGCAAGCA CCTCAGCTTC	3300
TGAATCGGCC TCAACCAGCG CCTCAGCCTC AGCATCAACG AGTGCTTCGG CTTCAGCAAG	3360
CACAAGCGCC TCGGCTTCAG CATCAACGAG TACGTGAGCT TCAGCGTCAA CCAGTGCTTC	3420
AGCCTCAGCA TCAACAAGTG CGTCAGCTCA GCAAGTATCT CAGCGTCTGA ATCGGCATCA	3480
ACGAGTGCCT CTGAGTCAGC ATCAACGAGT ACGTCAGCCT CAGCAAGCAC CTCAGCTTCT	3540
GAATCGGCCT CAACCAGTGC GTCACCTCAG CATCGACAAG CGCCTCAGCT TCAGCAAGTA	3600
CCAGTGCTTC AGCCTCAGCG TCGACAAGTG CGTCGGCCTC AACCAGTGCA TCTGAATCGG	3660
CATCAACCAG TCGCTCAGCC TCAGCAAGTA CTAGTGATC GGCTTCAGCA TCAACCAGTG	3720
CCTCGGCTTC AGCGTCAAAC AGTG	3744

(2) INFORMATION FOR SEQ ID NO: 264:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 795 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 264:

CGATAAAGAG GCCTTGAGTA ATCTCAATTT GCAGATTGAA AATGGAGAGA TTATGGGCTT	60
GATTGGTCAT AATGGGGCTG GAAAATCGAC CACTATAAAA TCCCTAGTCA GTATCATTTT	120
ACCCAGCAGT GGTCTGATTT TGGTAGACGG TCAGGAGTTA TCGGAAAATC GCTTGGCTAT	180
TAAACGAAAG ATTGGCTACG TAGCAGACTC GCCTGACTTA TTTTACGCT TAACGGCCAA	240
TGAATTTTGG GAATTGATCG CCTCATCCTA TGATCTGAGT AGATCTGACT TGGAGGCTAG	300

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TCTAGCTAGG CTATTGAACG TTTTGTGATTT TGCTGAAAAT CGCTATCAGG TTATTGAAAC	360
TCTTTCTCAC GGAATGCGTC AGAAAGTCTT TGTATCGGA GCACTCTTGT CTGATCCCGA	420
TATTTGGGTC TTGGATGAAC CCTTGACTGG TTTGGATCCC CAGGCTGCCT TTGATTTGAA	480
ACAGATGATG AAGGAACATG CACAAAAAGG GAAGACAGTC TTGTTTCAA CTCATGTCCT	540
AGAGGTGGCA GAGCAAGTCT GTGATCGGAT TGCCATTTTG AAAAAGGGGC ATTTGATTTA	600
TTGTGGTAGT GTAGAGGACT TGAGAAAAGA TTACCCAGAC CAGTCTTTGG AAAGTATCTA	660
CCTTAGTCTT GCTGGTAGAA AAGAGGAGGT TGCGGATGCG TCTCAAGGTC ATTAAAAAAT	720
TAGTTGATAT CAATATCCTT TATTATCTC AAGAAGCTAA TCTGGCTAAT CTACGAAAGA	780
AGCAGGCTAA GAATC	795

(2) INFORMATION FOR SEQ ID NO: 265:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2231 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 265:

TGGTAATGTG CTTGGCAGCw TCCTTGACAC TGCTACTACC ATTTCCCATTA GCGACCGACA	60
TACCAACGCC AGCCAGCATT TCAAGATCAT TATCTGAGTC ACCAAAAGCC ATGACTTGGT	120
TGAGGTCAAA GCCATATTCT TTCCCAACTC GGCGAATGCC TTCTAATTTA GAATTTCCCT	180
GATTGATGAC ATCCGATGCA AAAGGATTGC TACGTGTCAA TTCAAGTCT TCAAAATCAG	240
CTGCCGCCTT CTCAGATTCT TCTGGTGTCA TCAGCATCAA AACTTGGTAG ATAGGCTGAT	300
TCATCAGGTG AAGCAGGTCC TCTTCCTTTT GGGGAACAAC CTGCTGACC ATGCGATTAA	360
AAGACTGACT CACCGTCCGA GTTAAACAG AGGGAACGAA GCGACTAATT CGTTGGGAAA	420
AAGAACCAG ACCAAAGGAC ATGATTTTAG AACCCAACAT GGCACTCTTG GTCCCTAGAG	480
CAATCTCCGT GCCCTCTTTT TTAGCATAGC TAATTAGATG GCGCAAATGT AACTTGGAAA	540
TAGGGCTCGT GAACAAGACT CTGTCTTTAC TAAAGATATA CTGGCCATTA TAGGTTACCG	600
CAAAATCCAG ATCCAAATCG TCCATCAATT CCTTAACAAA AAAAGGTCCT CGCCCTGTCG	660
CTACGCCAAC TAGTACCCCT TGTTCTTTGA CAATCTTAAT CGCATCCTTA GTGGATTTC	720
AAACACTCTT GCGATTGTTG ACCAAGGTTT CATCGATATC AAAAAAACA GCTTTGACTT	780
CCATCCTATC CCAATCTCCC CTTTGTGAT ACAATGATTA TACCACATTT CAGAAAGAGT	840
GAGTAAATCA TGCCTAAGAA AATCCTTGTT TTACATACGG GTGGAATAT TTCCATGCAG	900

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GCCGATGCTT CTGGCGCTGT TGTGACGAGT TCAGATAATC CCATGAACCA TGTGTCCAAC      960
CCACTTGAAG GAATCCAAGT CCACGCCTTG GACTTTTTTA ACCTTCCAAG TCCCCATATC      1020
AAACCCAAAC ATATGCTGGT CCTCTACCAG AAAATTAAAG AGGAAGCAGA TAACTACGAT      1080
GGAGTGGTGA TCACACACGG AACCGATACT TTAGAGGAAA CAGCCTATTT CCTTGATACC      1140
ATGGAAGTTC CCCATATGCC TATCGTTCTA ACAGGAGCCA TCGGTACTCC AATGAGCTCG      1200
GTAGTGATGG TGTTTATAAT TACCTAAGTG CTTTACGAGT GGCCAGCGAT GACAGGGCTG      1260
CTGACAAAGG AGTTTTGGTC GTTATGAACG ATGAAATCCA CGCTGCCAAG TATGTCACCA      1320
AAACACATAC GACTAATGTC AGCACCTTCC AGACTCCAAC ACATGGCCCC CTGGGTCTCA      1380
TCATGAAACA GGAAATCCTC TACTTCAAAA CAGCTGAACC TCGTGTTCGC TTTGACCTTG      1440
ATCACATACA AGGTTTAGTC CCTATCATCT CGGCTTATGC TGGTATGACA GATGAGCTGA      1500
TTGATATGCT GGATTTAGAA CACTTGGACG GTTTGATTAT CCAAGCCTTC GGAGCTGGTA      1560
ATATTCCTCA AGAAACGGCT CAAAAATTAG AAAGCCTTCT GCAAAAAGGA ATTCCAGTCG      1620
CTCTGGTATC ACGATGCTTT AACGGTATTG CCGAGCCTGT TTATGCATAC CAGGGTGGGG      1680
GCGTACAGTT GCAAAAAGCA GCGGTTTTCT TTGTTAAAGA ACTCAACGCC CAAAAAGCTC      1740
GCTTGAAACT CCTCATCGCC CTCAATGCCG GACTAACAGG ACAGGCTTTG AAAGACTATA      1800
TGGAAGGCTA ATACTCTTCG AAAATCTCTG CAAACCACGT CACGTCGCCT TACCGTATGT      1860
ATGGEACTGA CTTCGTCAGT TTCATCTACA ACCTCAAAAA CATGTTTTGA GCTGACTTCG      1920
TCAGTTCTAT CTACAACCTC AAAAACATGT TTTGAGCTGA CTTTCGTCAGT TCTATCTACA      1980
ACCTCAAAAA CATGTTTTGA GCTGACTTCG TCAGTTCTAT CTACAACCTC AAAAACATGT      2040
TTTGAGCTGA CTTTCGTCAGT TCTATCTACA ACCTCAAAAA CATGTTTTGA GCTGACTTCG      2100
TCAGTTCTAT CTACAACCTC AAAAACATGT TTTGAGCTGA CTTTCGTCAGT TCTATCTACA      2160
ACCTCAAAAA CATGTTTTGA GCTGACTTCG TTAGTTTCAT CTACAACCTC AAAAACATGT      2220
TTTGAGCTGA C

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(2) INFORMATION FOR SEQ ID NO: 266:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 1310 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 266:

1294

GAGTCAAAGG CTCCGAGGTT GACTTTTTAC AAGGGGACAG GTGAATATTA TCTAGACCTG	60
TCAGAAATTC TCTTCTTTGA AACAGAAGGG AGCAAGATCT ACGCTCATAA CCAGAAGGAA	120
GCTTATGAGG TTCGCCTCAA GCTCTATGAG TTGGAGTCTA TCTTGCCTCG CTATTTTAAT	180
CGAGTTTCCA AGTCAACGAT CGCAAACATC CGTCAGATTT ACTCAGTGGA CAAGTCCTTT	240
TCAGGAACGG GCACCATTTT CTTTTATCAG ACGCACAAGG AGGTTCATGT CTCACGGCAT	300
TACCAATCCC TCCTAAAAGA AAATCTAAGA AACATGAGGT AAAAAACATG AAAAAGAAAG	360
CATTTGGTAT TGTTTTATTG GTTTTAGCAG CTTGGATCTT GCTGCAAGGG AATTTTGAA	420
TTCTTCTTTT GGATGGTAAA ATATGGCCTT TACTAGGTAT TGTTTTTTTT GCTTATAAGT	480
CCATTGAGTC CATCCTTAGA CGTCATCTCA CTTGCGCAGT TTTTACAGGT TTACTGGCGC	540
TCATCATTCG AAATTACGCT TATGACTTGT TACCAGTTAC CAATCATTCT CTTATTTGGG	600
CTAGCATCTT GGTGGTACTT GGTGTTGGTT ATCTGACGCA TTCAAGTAAG TTCTGGAATG	660
AAAAAAATG GTGGTACAAT GGGAAAAAAA CAGTCGTCAC GGATAAGGAA GTCGCTTTTG	720
GTAGCGGGAC CTTCTATAAG CAAGATCAAG ATCTCGTAGA TGACCAAGTG GAAGTCGCTT	780
TTGGGGATGC TAAAATCTAC TATGATAATG CAGAGATGCT AGGTGATTTT GCAACTTTAA	840
ATATTGAAGT GGCCTTCGGG AATGCAACCG TCTATGTTCC ACAACACTGG CGTGTAGATT	900
TGAAAGTAGA AACCTCCTTT GGTGCAGCTA AGGCTGACGC TCCTGTAGCC CCAACCAGCA	960
AAACCTTGAT TATCCGTGGA GATGTGGCTT TTGGGAAGTT GGAAATTGTC TACGTTAAAT	1020
AAAAAATCT TCACTTCAAC CATCAAAATA GACGTACTAA GAGTAGGAAA TTGATGCCTT	1080
GCTCTGATTT CAGTTCTATG GTTGTTAGAC TTTAAAAAAT GAAATGCTGC CTTTAAAAGT	1140
TGTATATTTT TCGATATTTT GGCTTTTACG TTTGATGTAT CTATGTACTA CAGCGTAGAT	1200
GATGTAGTGT CAAATGCTTT TAAAAACGG ATGATATTGG ACAGTTTTTT TGCCTTTAAT	1260
TGCTCAGGAA CCATGAAAGT CAGTACCTGG GTTTATGACA AGGGAGAATG	1310

(2) INFORMATION FOR SEQ ID NO: 267:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 5922 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 267:

ACTCTGATTT GATTGGAACG ACAGTCGGTG CCATTGCAGT TACTTCAAAC GTAACGACTT	60
ATGTTGAGTC TGCTGCTGGT ATCGGTGCAG GTGGACGTAC TGGTTTGACA GCCTTGCTTG	120

1295

TAGCTATCTG TTTTGCGATT TCAAGCTTCT TTAGCCCACT TCTAGCGATC GTACCAACAG	180
CGGCTACAGC TCCAATCTTG ATTATCGTTG GGATTATGAT GCTTGGTAGC TTGAAAAATA	240
TCCATTGGGA TGATATGTCT GAAGCAGTTC CTGCCTTCTT CACATCTATC TTTATGGGAT	300
TCAGCTACTC TATCACTCAA GGGATTGCAG TTGGTTTCTT GACTTACACT TTGACTAAGC	360
TTGTTAAAGG TCAAGTTAAA GATGTTTCATG TCATGATTG GATTTTGGAT GCCTTGTTTA	420
TCCTTAACTA CATCAGCATG GCCTTATAAT AGAATGACCC AGGGGGATTT CCCCCCTTTT	480
TTAATACAAG GAGATAGGTG ATGAAAGAGA AAAATATGTG GAAAGAATTG TTGAATCGTG	540
CAGGCTGGAT TTTGGTCTTT TTACTTGCCG TCCTTTTATA TCAGGTTCCTT CTAGTGGTTA	600
CCTCTATTTT GACTTTAAAA GAAGTAGCCC TGCTACAGTC AGGGCTGATA GTTGCTGGCC	660
TTTCAATTGT GGTCTGCGCT CTATTTATTA TGGGAGCTCG TAAAACCAAG TTAGCTAGTT	720
TTAATTTTTC TTTTPTTAGA GCTAAAGATT TGGCACGTTT GGGCTTGAGT TATCTAGTTA	780
TTGTCGGGTC AAATATACTT GGTTCATTT TATTGCAACT GTCAAATGAG ACGACAACAG	840
CTAACCAGTC TCAGATTAAT GATATGGTTC AAAATAGTTC GTTGATTTC AGTTTCTTCT	900
TGCTAGCCTT GCTTGCTCCG ATTTGTGAGG AAATCTTGTG TCGTGGGATT GTTCCTAAAA	960
AGATTTTCCG AGGCAAGGAG AACTTGGGAT TTGTAGTCGG TACGATTGTG TTTGCTTTAT	1020
TGCATCAACC AAGTAATTTA CCTTCTTTAT TGATTTATGG AGGTATGTG ACAGTTCTAT	1080
CTTGGACAGC CTACAAGACC CAACGTTTGG AAATGTCGAT CTTGCTTCAC ATGATTGTTA	1140
ATGGGATTGC TTTCTGTTTG TTGGCTCTTG TGGTGATTAT GAGTCGGACA TTAGGAATTT	1200
CTGTTTAAAA GTTTTATGT AGGAACCGAC CTCTTTCTAC CAGGGAAAGA TGAATGCAAT	1260
CGTGTCCATC TTTTCTTTT TATGGTAAAA TAGAAAAATA ATATGATGAA AATCCTTGAG	1320
GGAGTGACCG ATATGTCAAG TAAAGCCAAT CATGCAAAGA CAGTTATTTG CGGAATTATC	1380
AATGTAACCC CAGACTCCTT TTCGGACGGT GGTCAATTTT TTGCTCTTGA GCAGGCGCTC	1440
CAGCAGGCTC GTAAATTGAT AGCAGAAGGA GCCAGTATGC TAGATATCGG CGGAGAATCG	1500
ACTCGGCCGG GAAGTAGCTA TGTTGAGATA GAAGAGGAAA TCCAGCGTGT TGTTCCAGTG	1560
ATCAAAGCGA TTCGCAAGGA AAGTGATGTC CTCATCTCTA TTGATACTTG GAAGAGTCAA	1620
GTAGCAGAGG CTGCTTTGGC TGCTGGTGCC GATCTAGTCA ATGATATCAC TGGTCTTATG	1680
GGTGATGAGA AAATGGCTTA TGTGGTAGCT GAAGCGAGAG CGAAAGTGGT CATCATGTTT	1740
AACCCAGTTA TGGCTCGACC TCAGCATCCT AGTTCGCTTA TCTTCCCTCA TTTTGGTTTT	1800
GGTCAAACCT TTACAGAAAA AGAGTTAGCT GACTTTGAAA CATTGCCAAT CGAAGACTTG	1860

1296

ATGGTGGCTT TCTTTGAACG AGCACTAGCG AGAGCGGCAG AAGCTGGTAT TGCACCAGAA	1920
AATATCCTGT TGGATCCAGG AATTGGCTTT GGTCTGACCA AGAAAGAAAA TCTGCTTCTT	1980
TTACGGGACC TGGATAAACT ACATCAGAAG GGCTATCCAA TCTTTCTCGG AGTGTGCGGC	2040
AAGCgATTG TCATCAATAT CCTAGAGGAG AATGGTTTTG AAGTCAATCC TGAGACAGAG	2100
CTTGGTTTTCC GAAATCGGGA CACGGCTTCG GCTCATGTAA CTAGTATCGC TGCAGACAG	2160
GGTGTAGAAG TGGTGCGCGT GCATGACGTA GCTAGTCACA GGATGGCAGT TGA AATTGCC	2220
TCTGCCATTC GTCTGGCTGA TGAAGCGGAA AATTTAGATT TAAAACAATA TAAATAAGAT	2280
GAAAGAAATT GAAAACAATC AGTGGATTGC TAACTACCGG ACGGATCAAC CGCATTTTGG	2340
CTTGGAACGA ATGGTGGAACT GTTTAGCTTT GCGTGGCAAT CCCCATCTCA AACTCAAGGT	2400
CCTCCATATC GGAGGGACTA ACGGCAAGGG CTCGACTATT GCTTTTTTGA AAAAGATGCT	2460
AGAAAAGCTA GGTTGAGAG TTGGCGTGTT TAGCTCGCCC TATCTCATTC ATTACACAGA	2520
CCAGATTAGC ATCAATGGGG AATCGATCTC AGAAGCGAGG CTAGAAGCTC TCATGGCAGA	2580
CTATCAGTCT TTGCTGGAGG GAGAAGCGGT CGCCAATTTA CAGGGCACAA CCGAGTTTGA	2640
GATTATCACA GCCCTGGCCT ATGACTACTT TGCCTCAGAG CAAGTAGATG TGGCCATCAT	2700
GGAAGTTGGC ATGGGTGGAC TTTTGGATAG TACCAATGTC TGTCAGCCCA TTTTGACAGG	2760
AATTACAAC TTTGGCTTGG ATCATGTGGC TCTACTTGGT GACACCTTGG AGGTCATAGC	2820
AGAGCAGAAG GCAGGTATTA TCAAACAAGG GATGCCCTTG GTAACAGGGC GTATTGCTCC	2880
AGAAGCCTTG GCTGTGATTG ACCGCATTGC GGAAGGGAAA GATGCGCCGA GACTTGCCTA	2940
CGGGACAGAT TATCAGGTTT GTCATCAAGA AAGTGTGGTG ACAGGGGAAG TCTTTGACTA	3000
TACAAGTGCT GTCAGACAAG GTCGCTTCCA GACTAGCCTG CTTGGTTTGT ACCAAATAGA	3060
GAATGCTGGG ATGGCCATAG CTTTACTTGA TACTTTTGT CAAGAAGATG GTCGAGAGCT	3120
AGCAAGCAAT GATTTTCTTG GTCAAGCCTT GGAAGAAACA AGTTGGCCAG GGCCTTTGGA	3180
AATCGTGTC AGAGATCCCT TGATGATTTT GGATGGAGCC CACAATCCCC ATGCTATCAA	3240
GGCCTTGTTG GTAACCTTGC AAGAACGTTT TGCGGATTAT CATAAGGAAA TCCTCTTCAC	3300
TTGTATCAAA ACCAAGGCCT TGGAGGATAT GTTGGACTTG CTGGGAGCCA TGCCAGTTAC	3360
CGAGCTTACT CTAACACATT TTGCGGATAG TCGGGCGACG GATGAAAACG TGCTGAAAGA	3420
GGCAGCTAAG TCTAGAAATC TCAGCTACCA AGATTGGCAT GATTTTCTAG AGCAGAATTT	3480
GACAGATAAA AAAGAAGAGA AACAAACAGT TAGGATTGTC ACAGGTTCCCT TGTATTTCTT	3540
GAGCCAAGTG AGGGCCTATC TGATGGAGAG GAAGAACGAG AATGGATACA CAAAAGATTG	3600
AAGCGGCTGT AAAAATGATT ATCGAGGCTG TAGGAGAGGA CGCTAATCGC GAGGGCTTGC	3660

1297

AGGAAACACC TGCTCGTGTA GCCCGTATGT ATCAAGAGAT TTTTTCAGGT CTTGGTCAAA	3720
CAGCAGAGGA ACATTTGTCA AAATCCTTTG AAATTATTGA CGATAATATG GTGGTAGAAA	3780
AGGATATCTT TTTCCATACC ATGTGTGAAC ACCACTTCTT GCCATTTTAT GGTAGAGCGC	3840
ACATTGCCTA CATTCAGAT GGTCTGTGG CAGGCTTGT TAAGCTAGCC CGTACGGTTG	3900
AAGTTTATTC GAAAAACCA CAAATCAAG AACGTTTGA TATCGAAGTG GCCGATGCCT	3960
TGATGGACTA TCTAGGTGCT AAAGGAGCCT TTGTGTGCAT TGAGGCGGAA CATATGTGTA	4020
TGAGTATGCG TGGTGTTAGA AAACCAGGCA CTGCAACCTT GACGACAGTA GCTCGTGGTC	4080
TATTTGAAAC AGATAAGGAT CTCCGTGACC AAGCTTATCG TTTAATGGGG CTATAAAAAG	4140
AATCCGCTTC AAGCGGATTT TTCTAGAAAG GAATCATTAT GGATCAACTG CAGATTAAGG	4200
ATTTGGAAAT GTTTCCTAT CATGGTCTTT TTCCTAGTGA GAAAGAATTG GGGCAGAAAT	4260
TTGTCGTTTC AGCCATCCTA TCCTATGATA TGACCAAGGC AGCTACAGAC TTGGATTTAA	4320
CAGCCTCTGT CCATTACGGA GAATTGTGTC AGCAGTGGAC GACTTGGTTT CAGGAAACGA	4380
GTGAAGATTT GATTGAAACG GTAGCCTATA AACTGGTGA ACGTACCTTT GAGTTTTATC	4440
CTCTTGTCCTA AGAAATGAAG TTGGAACCTGA AAAAACCTTG GGCACCGGTG CATTTGTCAC	4500
TAGATACTTG CTCGGTAACC ATTCATCGCC GCAAGCAACG AGCCTTTATC GCCCTAGGAA	4560
GCAATATGGG AGATAAACAA GCAAACTTGA AGCAAGCCAT TGACAAACTG CGAGCTCGTG	4620
GCATCCATAT TCTCAAAGAG TCCAGTGTCT TAGCGACGGA GCCTTGGGGT GGAGTGGAGC	4680
AGGATAGCTT TGCCAATCAA GTGGTTGAGG TGGAAACCTG GCTACCAGCA CAAGACTTGT	4740
TAGAAACCTT GTTAGCCATT GAGTCAGAGC TGGGACGGGT GAGAGAAGTG CATTGGGGAC	4800
CTCGTTTGAT TGATTGGAC TTGCTCTTTG TGGAGGACCA GATCCTTTAT ACAGACGACC	4860
TCATATTGCC TCATCCTTAC ATAGCGGAAC GCCTTTTGT CTTGAGTCT TACAGGAAAT	4920
TGCGCCTCAT TTTATCCATC CGATATTAAA ACAACCGATC CGCAACTTGT ATGATGCTTT	4980
GAAAAAATAG AAAAATCTA GTTTTCAGTT ACTTGCAACT GAAGGCTAGA GTTTTATAC	5040
TCTTCGAAAA TCTCTTCAA CCACGTCAGC GTCGCCTTAC CGTACTCAAG TACAGCTTGC	5100
GGCTAGCTTC CTAGTTTGCT CTTTGATTTT CATTGAGTAT TAAAATAGGT CATTTCTTC	5160
TGGGAGGAGG ATAGTTTCTC TACCGTCCAT GTCTAAAACC AGTACTCTTG GGGGATAACG	5220
AGGGTCGAAA GGATGGTTAA AGTCAAAATC AATGGCTGTA GGGAGGTGTT GACTTGAAAA	5280
GTGGAAGGTA ATCTTTCCTT GGTATTAAAG CAATTGAAAC TCGAGTTCTT CTTCCAATTC	5340
AAAGACATTT TTTAAGAAAT GGTCGATGAT ATACCAAAAA GAGTCAATGA TGTCAACAGG	5400

1298

CAAGCTGGTA ACAATACCAA AACTAGCAGA TCGCATGTGG GTATTGGTAA AAGCCATATC	5460
TCTGTCCCCT TTCTTTTCCC TTATCATACA GCAAATAGGA TTAATAATCA AGAAAAGGTG	5520
ATTTTTTGAA AAGGATTTTA GTTACAGGGA GAAATAGGGA AAAAATTCCT AAAAATCTAC	5580
CGAAGTTAAT AGGTAAATTC CCAAATTAAC TTGATTATAT AACTTTCAGT TACTTTGAGA	5640
AGTTACCGAA AAATATTTTT CATATCTATT GACTTTTAGG GGTAATAATT GGTATGATAG	5700
TAGGCGGTAT TGTTTACCCC ATTTGAAAGG CCCCAGAAC TTCCAAATAC TTTTCGATGG	5760
GAAGGAACAC CCATCACCGT AAACAAAAAT CGAACTATAT ATAGGAGAAA TCATGAACAA	5820
AACAACATTT ATGGCTAAAC CAGGCCAAGT TGAACGTAAA TGGTACGTAG TTGACGCAAC	5880
TGATGTACCA CTTGGACGTC TTTCTGCAGT AGTTGCTAGC GT	5922

(2) INFORMATION FOR SEQ ID NO: 268:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1988 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 268:

TAACTATCTA CGATGAGCTG TTGTGATTCT CATTAGTTCC CCTTTCCCAA GAGGCATAGG	60
GGTGCGCATA ATAGATGTGC TCCTCAGAAA ATATATCAAA CAAGCGATTG AATTCCGTTC	120
CATTATCTGC CGTGATGGAA AGAATCTTGT GTTGTTTTAA GATGAGTTT AGAGCCTGAT	180
TGACCACCTC AGCACTTTTA TTTGGAATCA ATCGGATGAT CTGATGTCTA CTCTTTCGAT	240
CCGTCAAGAC AATCAAGCAG TAGTTTTTCG ATCTCGTAAG TAGAACCGTA TCAATCTCAT	300
AATGCCCAT CTCCAAGCGA AGATTGATAG CTTCAGGCCG CTGTTTCGATG GATTGACCAG	360
CAGGTTTAAA GTTGGTGCTA GCCTGTTTCT TAAGCGCTT TCCTTTTCTA GGGTAAAGCA	420
AATCCTGCTT GCTTAACCCC AATTTTCCAT GATGAATCCA ATAGTAAATG GTTGAAATTC	480
CCACGTAAAC CCCTTTAGCC ATAACCATCA TTTCAGGCGA AAATTTTGG TTATGATAGT	540
GGAGAATCTT TTCCTTAGT TCCTTGGTCA AGCTTGATTT CTTGACCGAG CGCTTGCGAT	600
TGTTTTCATA AGACTGTGA GCGTAGTCGG CAGAATAAAC CTCTTTGAAG CGCCCTTTTC	660
CAAGACATTG TCGGACTGTC CCACGCTTGA TTTCAGTGTG ATAGTTTGAG GAGCTTTTCC	720
AAGTAGAGAG GCAATTCTC TATTGATTT TCCTTCTTT TTCCATCTTT CGATTAAGCG	780
ACGGCTATCG ATTGTCAAAT GTTTGGCTTT TGTAGTATAA TTGTCTTGCA TCTCTGTGCC	840
TTTCTTGTGT TTGTGGTTGA ACAACAAGTA TAACACAGAG GTGCTTTCTT ATGCCTACAA	900

1299

GAGCTTTCAT TATTTCCATT TTCTTTTGA TTTCACTCTA TTCTGAAAAA CTTGTGTATA	960
TTTACTGAAG CTAGCAAGTC TTACCTGTAA ATTTAATGAA AGCAACACAA AATCCGAGAG	1020
GGGAATCTCG GATTAATAGA TAGAGAGTTT TTAGTTTAAA TAAATTGTTT AAAATATCAA	1080
CAACATCACT TCTTTTCTTA ACCTGATAAG TCTTGATTCC TAATTTTGGG GCTACGATTA	1140
TATTGTCCTC AATATCGTCT AGAAAGACAC AATTTCTAGG TTATAACTGG TATTTATCGA	1200
TAGTTACTCA TATACATCAG TCCACCTCCA TACTTATGTG CGAGCCTCTC TTTGTATTAT	1260
ACCTCCATAC TCACCTTACA GATTCTTTTG GTAATAATAT CTTTGCCTAA TGTAGAGACA	1320
GTCTTGCAAA GAAAAAATT CCTGTAGCC ATGTTTCTGA TAAAAGTCCG GTGCCTGGAA	1380
CTGGTAAGTA TTGACAAAGG CAAAACAACA ATTCGATTG TTAGCTTCAC TTTCTGCCTG	1440
TTGCAATAGT TTTGAACCGA TTCCTTGCCC TCGCAGTTCC TCTTTTACAA ACAAATACTC	1500
GATTTCTAGC CAATTTCCAA AAGTCTCTGC TATCAAACCT GCCAGGAGAT TGCCCTTTTC	1560
ATCTTCGACA TAAAGATTAA GTGGCTCACT TTCAGCCTCT TCTCTTTTGG AACGGTTATA	1620
AACACGAATC AGATTCCCTA TTTCTTGCGA TTTATGTGAT TCCTTATTTT CCAATCTAAA	1680
GTATAGTGAA ATGAAATAAA ACATGCGCAA ATCGATTAAAG GAATTTAATC TAATTTCTAA	1740
CAATGTCTTA GAAATCAAAG TGTACTATTT TAACTTCAAT GCACTATACA TCTAATACTC	1800
AATAAAAATC AAAGAGCAAA CTAGGAACT AGCCGCAGGT TGCTCAAAAC ACTGTTTTGA	1860
GGTTGTAGAT AGAACTGACG AAGTCAGCTC AAAACATAGT TTTGAGGTTG TAGATGAAAC	1920
TGACGAAGTC GGCTCAAAAC ATGGTTTTGA GGTGTAGAT GAAACTGACG AAGTCAGCTC	1980
AAAACAGG	1988

(2) INFORMATION FOR SEQ ID NO: 269:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 709 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 269:

CCGGATATTT GTTTTATGTA ATTTTCTTGC AAGTTTCTTC TTAGTAGCTT GTCAGTCAGG	60
TTCTAATGGT TCTCAGTCTG CTGTGGATGC TATCAAACAA AAAGGGAAAT TAGTTGTGGC	120
AACCAGTCCT GACTATGCAC CCTTTGAATT TCAATCATTG GTTGATGGAA AGAACCAGGT	180
AGTCGGTGCA GACATCGACA TGGCTCAGGC TATCGCTGAT GAACTTGGGG TTAAGTTGGA	240

1300

AATCTCAAGC ATGAGTTTGG ACAATGTTTT GACCAGTCTT CAAACTGGTA AGGCTGACCT	300
AGCAGTTGCA GGAATTAGTG CTA CTGACGA GAGAAAAGAA GTCTTTGATT TTTCAATCCC	360
ATACTATGAA AACAAAGATTA GTTCTTGGT TCGTAAGGCT GATGTGGAAG AATACAAGGA	420
TTTAACTAGC CTAGAAAGTG CTAATATTGC AGCCCCAAAA GGGACTGTTC CAGAATCAAT	480
GGTCAAGGAA CAATTGCCAA AAGTTCAATT AACTTCCCTA ACTAATATGG GTGAAGCAGT	540
CAATGAATTG CAGGCTGGAA AAATAGATGC TGTTCATATG GATGAGCCTG TTGCACTTAG	600
TTATGCTGCT AAAAACGCTG GCTTAGCTGT CGCAACTGTC AGCTTGAAGA TGAAGGACGG	660
CGACGCCAAT GCCGyTGCTC TTAGAAaATA GTGATGATTT GAAAGAAGT	709

(2) INFORMATION FOR SEQ ID NO: 270:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1680 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 270:

TATAAAATGT TAAGTTAAAT GATTTCAAAA TTCAGAAAGG GATTGCTTTA TGCAGTTCCT	60
TTTTATTTTA ACAGGAGTGA AACTATAGTG TTTCTAAATT GTGAATCAAT CAAAAGTAT	120
TGTGATGGGG CTATTCTAGC TTTAGAAACC TTCAAAAATT AAAATTTAAG GCAATCAATT	180
ACTTGGAAGA GTATGAAAGC ATTTAGTTTA TAGGAATTCT AGGTCTAGAA TTACATATAT	240
ATATTTATGA AGACGGGGTG TTCGATAGTT AGTATTGTTC TATTCTGAAA GATTTGAGCT	300
GTCAGTTGTA TAGAAAGTGT TCGAATTTTT TTAAGTGATT AAATTAGTTA ATTGTATGAG	360
GTGCTTTATG ATATAATGTT CTTAATGAAT TTTCAGAAAG GAAAACCTCA AATTGTTCTA	420
CAAATTTCTA CTCTTCGACC TCGACCACAC TCTTCTTGAT TTTGATGCTG CTGAGGATGT	480
GGCTTTGACC CAACTTCTAA AAGAAGAAGG AGTTGCGGAT ATTCAGGCTT ATAAAGATT	540
TTACGTTCCCT ATGAACAAGG CTCTCTGGAA AGACTTGGAG CTGAAGAAAA TCAGTAAACA	600
AGAGCTGGTT AACACGCGCT TTTCTCGTTT ATTTGCTCAT TTTGGACAGG AAAAAGACGG	660
TAGTTTCTTT GCCCAGCGTT ACCAATTTTA CCTCGCCCAG CAGGGACAAA CACTATCGGG	720
CGCTCATGAT CTCTTGACA GCCTCATTGA GCGTGATTAT AACTTGTATG CTGCGACAAA	780
TGGCATTACT GCCATTCAGA CAGGACGTTT GGCTCAATCT GGTCTAGCAC CTTATTTCAA	840
TCAAGTCTTT ATCTCAGAAC AGTTGCAAAC TCAAAAGCCG GATGCTCTTT TTTATGAAAA	900
GATTGGCCAG CAAATTGCTG GATTTAGTAA AGAAAAGACG CTGATGATTG GAGATTCTCT	960

1301

AACCGCCGAC ATTCAAGGTG GCAATAATGC GGGGATTGAC ACTATCTGGT ATAATCCTCA	1020
TCACCTCGAA AATCACACAC AAGCCCAGCC GACTTACGAA GTCTATTCTT ACCAAGACTT	1080
GCTGGATTGT TTAGATAAAA ATATTCTTGA AAAGATCACA TTTTAAAGGA GACGAGCTAA	1140
TGACTACAAA AAAGCTAATA TTAATATTGA AGAGTACATT GAAATGTCTG AAGTTGATTT	1200
TAATGAAGCT GTTAATTATG AATTTACATC TGACACTTGT CAATTAGCAA ATAGTATTTA	1260
TCAATCTCTT TTAAAGTTTT TTGATAAGAA AAATTTCTCT GGCGATTAA TTTTACTTG	1320
GAAATCTCCA TCATTAGTCA AAGAAGGGGA TTATATTGGG AGAAGGGATT CACAAGTAGA	1380
TAATCTTAGA GTAATAGGAA ATATATTTCC GAATTATCTT ACTAATCGAA AATATAGCCT	1440
CAATATGAAT CGTAATGGCT GTATGGGAGA TTTTCCTCAT GACTTTTTTG ATATATACCT	1500
AGATCATGTA GCAAAATATG CCTACGAACA AAAAGTTAAT AATATTAAAG AGTATTATCC	1560
TTTAAAAAGA GCGATTTTAC ACCAAGAGAA TGCATTGTAT TTTCGATTTT TTTCTAATTT	1620
TGACGACTTT TTAGAAAAAA ATTATTTAAA GACTATATGG CAAGTTTCTA AAGAACTCC	1680

(2) INFORMATION FOR SEQ ID NO: 271:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 598 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 271:

AGCTCGGTAC GTAGTATnTG TGGTGCATAA ATGAGTGAAG AGAGGATAGA GAGGATGAGG	60
CCGATAAGAA CACCGGTAGC TGCATCGTGA AATACTTGTT TTTTCATAGT TCTAATTTCT	120
CCTTGATGGT TTTTAGATAA CGGCGTGAAG AGTAGGTGAA GCTTTCGTTT TTCAAGAAAA	180
TTTCTACCAG ACCGTTTGGC GTGAGCTTGA GGTGAGAGAT GGAATCGATA TTGATGATTT	240
CTGATTGGGA AATTTGGATA AAATTGGTTG GCAAGAGTTT AAGAACCTGA TAGAGTCGCA	300
AATCAATGCT GTAGGTCTGA CTCGCGGTTT CTGCTAGAAC CTTCCGATTC TCGATATAGA	360
AGCGCTGAAT CTTGCCAATC TCAACTAGAT AGACCTGATC ATCGATTTTT CTTTGATTT	420
TTTCTCTTTG GTCCAGATTT TCTGCGAACT CGATGACTTT CTGGACTTTT TCGGTTTCTT	480
GAGGTGCTTG GACAATCAGC TTTTCCTCCT CGTAAGTCTC ACTAATCTGT AGTTCTACTT	540
TCATAGTTTT CTCTCCTTTT CAGTTATACA AGGTTGTGAT CACTTCCTGT ATATCCGG	598

(2) INFORMATION FOR SEQ ID NO: 272:

1302

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1099 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 272:

CCAGCAAATC AATAACTGCA ATTGCTATAA AATGGATTCT ATAGAGTTT TTCATGACAA	60
GACCTCCCTC TTTTATCTAA CTTTATCTA CTCCAAAAGA ATGGGAGTTA CAACTAAAAT	120
GATAAAAATA GCAGAAGGGA GATTCTCTTA AGTTGGCTAG TATTCTTTAT TTGAGTTTCC	180
TTCTATTATC TAACTTCTTC ATCATTCAG ACAATAAAG CTCCGATTGC ATTGAGGATA	240
TAAAAGATGT ATTTACCGAT ATTGGCGAAG TTTCTTGAA TACCAGCTTT TGTGAGCTGA	300
ACGAAATGT AAATCAACCA AAAGCCCCAC TGAGTTGTTA GTTTTAATGC ATTCAAAGCA	360
TTGGCAATGA GGGACAGTGC AAAGGCAATA GTTGTTACGT AGGCAAGGAG ATTCATCTTG	420
CCCCATATC CGATATAGTT GGTACAAAG GCAAAGAGGA AGGCGATGAT GGAAATGATG	480
ATGGCCGCCA ATTTTACCTG TTTTGGCTC ATTTGGTTGG GTCTGCCTTC TTGCGAAGCT	540
TCCCATTCT TTATAGCAA GGTATAAATG AGGAAGGTGA CGGGATAGGT AATGATGGCC	600
GCCTTATTTT CAAGGATATA ATCAATAGCA CCGGACAAAA TGGTATTAAC AATACCAAAG	660
TAATTTCCCC ATTTGCTTAA TTTCCCGTG AAACGAGTGG ACAACATGGA AATCCCAACG	720
TTGGTTACGG AAATCAATCC AAAGGTACA AGAGCTGTCC ATGATCCCCA GTCTACAAAT	780
TTATCGAGGT GTGAGTTGAG GTAACCAGAT GCAATCGCAA TCCCAACGAC CAAAGCAACC	840
CCGAAGAGGT CAACTATTT AGATGTAGCA AAAATTTTTA GTGATTTTTT CATAGGTTAA	900
ACTACCTTTC TTTTTTCAA ATATTCTCCC ACCAAATGAA AGTAAAATAA AATGATAGAA	960
ATAAAACCCT GAAAATAAAG GTTCTATAAT ATTTGTAGTG GGTAAATCCA CTATAGATAT	1020
TATGGAGCCT ATTTTATTGT AGAAAAAAG TCCCATATGA CCTATAATGA AAAGCGACAA	1080
AACAACATCAT TAGAAAGAT	1099

(2) INFORMATION FOR SEQ ID NO: 273:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 273 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 273:

1303

CTGGGATTCA CGTGAAAAGG AAGCCCAGAG AGTAGCCAGG TGTACTGCTA GAACAGTGAG	60
TGAAATTGAA TATTACCATA GAGAGTCAAC CCAGATAGCT CAGGCTTTAG TTGAAAATCA	120
AGCTCGTATC GAGGGAATCT ATAAATACTT TAGCCTTAGC ATGCCAGACT ATTTTACTG	180
GCAATTAGAG CGGAAAGCTT CGCCTTATAT ATCAGTCTCT CTGTATGAAA ATGTTGATGA	240
CCTCTATGTT CGAAATGATT TTGTAACTGG GGTGGCCATT GCTTTTCAAG ATTACAAGGA	300
AGTCTATGTT TCTACTAAAG ACAAACGTAG GkKAGAAAAA ATCAGGGCTG AGGATTTCAA	360
ACCAGCAGGA AATAGTTTGG CCATTCCAGT GTCAGATCCA GTGTCAGATC AAGACTTAGG	420
AGTGATTTAC ATCTCCTTGG ATCCTGCTGT TTTATACCAT GCCATTGATA ATACTAGAGG	480
TCATACTCCG ATGGCAGTAA CAGTGACCTC ACCTTTTGAT ACGGAGATTT TTCATATGGG	540
TGAGACAGTT GATAAGGAGA GTGAAAATTG GCTAGTTGGC TTAACCTCTC ATGGATATCA	600
GGTTCAGGTG GCAGTTCCTA AAAACTTTGT TTTACAAGGA ACAGTGAATA GCTCTGCTTT	660
GATTGTGGGT TTGAGCCTTC TCTTTATTGT CATCTTTTAT CTGACTTTGA GGCAGACTTT	720
TGCTAATTAC CAAAAGCAGG TAGTGGATTT AGTAGAATCC ATTCAAGTCA TTGCTCAAGG	780
CGAAGAGGGG CGTCGGATTG ACATTTCCGA GAAAGATCAG GAATTACTCC TAATCGCGGA	840
GACGACCAAT GATATGTTGG ATCGATTGGA AAAGAATATC CATGATATTT ACCAGTTAGA	900
GCTTAGTCAA AAAGATGCCA ATATGCGAGC CTTGCAGGCG CAAATCAATC CTCATTTTAT	960
GTATAATACG CTGGAGTTCT TGCGCATGTA TGCAGTTATG CAGAGTCAAG ATGAGTTGGC	1020
AGATATCATT TATGAATTCA GTAGTCTCTT GCGTAACAAT ATTTCCGACG AAAGAGAGAC	1080
CCTCCTCAAA CAGGAATTAG AATTTTGCCG TAAATACAGC TATCTCTGCA TGGTTCGCTA	1140
TCCCAAGTCC ATTGCCTATG GTTTCAAGAT AGATCCAGAG TTAGAGAATA TGAAGATTCC	1200
CAAGTTTACC TTGCAACCGC TGGTAGAAAA CTATTTTCGC CATGGTGTG ACCACAGGCG	1260
GACAGATAAT GTGATTAGCA TCAAGGCTCT TAAACAGGAT GGTTTTGTGG AAATTTTGGT	1320
GGTCGATAAT GGTAGAGGAA TGTCGGCTGA AAAGTTGGCA AATATCCGAG AAAAATTAAAG	1380
TCAGAGATAT TTTGAACACC AAGCCAGCTA CAGTGATCAA AGGCAGTCTA TCGGGATTGT	1440
CAATGTACAC GAGCGTTTGG TGCTCTATTT TGGAGACCGC TATGCCATTA CTATAGAGTC	1500
TGCAGAGCAA GCCGGTGTTC AGTATCGTAT TACAATTCAA GATGAGTAGA AAGGGAGAAA	1560
ATGTATAAAG TATTATTAGT AGATGATGAG TACATGGTGA CAGAAGGTCT GAAGCGTTTG	1620
ATTCCCTTTG ATAAGTGGGA TATGGAGGTC GTCGCAACAG CCAGTCATGC CGATGAAGCT	1680
CTAGAATATG TTCAGGAAAA TCCTGTCGAT GTCATCATTT CCGATGTCAA TATGCCAGAC	1740

1304

AAAACAGGGC TTGATATGAT TCGGGAGATG AAAGAGATCT TACCAGATGC TGCCTATATC	1800
CTGCTCTCAG GTTATCAGGA GTTTGATTAT GTAAAAAGAG CAATGAACCT TAGTGTGGTG	1860
GACTATTTGG TCAAGCCTGT TGATAAGGTA GAGCTGGGAA ATCTGCTGGA GAAGATTGCA	1920
GGTCAGCTCG GCGAGAGAGG GAAGAAAAGT CAGACTCTTA GTCAAGAATT AGACGAGGCT	1980
GGATTTGTTA GTTATTTAGG GGATAAGGAG AATTGGTGGA TAGGTCTATC CAAGGAAAAA	2040
CAAGGTTCTT TCACCATTC CTAATATGTC TTGGGTCAAG ACTGGCAGAT TTTCATTTCT	2100
GGCCACCCCC TAGATGGTTT AGTCGTTACA CCTTTTGAAG CTCCTTATCA AGAACACTTT	2160
GAACGCTGGA AGCTGAATGC TGAGAAAACC CTCTTTTACG GTTCTGTAAA TCTGCAGCAG	2220
TCTGAGAGTC TCTTTGCCTA TTACGAACCG ATTTATAGGG TTATCATTCA GGGAAATCTC	2280
AATCAAATCG TAGAAGAGTT AAATCTCTTG GAGAAGGTAG TTCTTGAAAA TACACCTCGT	2340
GTTCGATTA CTAAACAGCT TTTTATCCAG TTTGTCATGG ATGTTTTCCA TTTATTTGAA	2400
CATCTCAAAG CTGATGATAT GACGGACATT GTCAAAACCA TTCATGCTAT TCAATCCTTC	2460
GATGAATTGG TTTCTTATAT CAAGGAAACT CTGATCAGCT TTTTCGGTCA ATACCGTATG	2520
AATGAAAATG TGGTCAGTGT GCTGGAAGTC ATTGTCGTG ATTACCAAAA AGAGCTTTCC	2580
CTCAAGGATA TCAGTAAGGC CCTCTTTATC AATCCTGTCT ATCTAGGGCA GTTGATTAAG	2640
CGTGAAACCG ATTCGACCTT TGCAGAGTTA CTAAACAAAC AACGTATTAA GGCTGCCAG	2700
CAGCTCTTGC TTCAACTAG TGA	2723

(2) INFORMATION FOR SEQ ID NO: 274:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 836 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 274:

CCGCAGTTT TTAAACCGT ATATAAGTAT AGCATAGTCA AAAAAAGAAAT GCAAGATTTT	60
TGCAAACTTT TTTAAATTT TTCGTAATTT TTCTTTTAAA GTTCTACTGT CAGGACTTGA	120
CCTTGCTTAA CAACCTGTTT TCCGGCGATA TAAACATCAT CTACATCACT AGATTTAACT	180
GCATAAACCA GGTGAGACAG CATATTTTCC TGAGGTTGGA GATGAATTTT CCCTTGTGGT	240
TGAATGACCA GAAAATCTGC TTGCTTGCCG ACTTCCAGAC TTCCTATCTG ATTTTCCATT	300
CCAAGGACCT TAGCCCCTTC GATTGTCAGT ACCTTGAGAG CTGTTTCGAT TGGAACTGG	360
CTGGCATCCC CACTTTTCAT CTTCTGAAGA AGAGCTGCAG TCCTTCCTTC CTCAAACATA	420

1305

TCTAGATTGT TATTGGAAGC AACCGAGTCA GTCGCAATTC CGACTGCTAC TCCCGCTTTT	480
TGGAGCTGGA TAATTGGAGC AATTCCTGAT GCCAGTTTGA GGTTACTGAT AGGATTGTGG	540
GCATAGCnA CTTGAGAAGA TGCCAAGCGT TCAATTTCTC TCTCGTTTAA TTCGACCCCG	600
TGAGCAAATA CGGACGGATG ATCTAAATAA CCCAGTTCTT CAAGAAAAGC AAGGGGGCGT	660
TTGCCGTATC GTTTGAGGAT AATTCCTGAC TCCTCCTTGG TCTCCGCCAC ATGGACATGG	720
AGCGGAATAT TTAGCTCTTT TGCCATTTCC AAACGCTT CCAGCAAGTC TCTACTGCAG	780
CTATACGGAG AATGAGGTGC TACCATAACC TTGAAATTG GATTTTTATA TTTTAA	836

(2) INFORMATION FOR SEQ ID NO: 275:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 2335 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 275:

ATTTTATTTT ACTTTTTAGG TGGTCTGGG CTATTCTTAT ATAGCnTCAA GACCATGGGA	60
GACGGTTTAC AACAACTGTC TGGAGATCGC CTGGGTTTT ACATTGACAA ATATACTAGT	120
AATCCTTTGT TTGGAGTTCT GGTGGTATT GGGATGACTG CTCTAATTCA GTCTAGTTCT	180
GGTGTAACAG TTATCACAGT CGGCCTGGTC AGTGCCGGTC TCTTAACCTT ACGTCAGGCT	240
ATCGGGATTG TCATGGGTGC TAATATTGGG ACAACTGTCA CATCCTTTCT CATCGGTTTT	300
AAATTAGGTA ACTATGCCCT ACCTATGCTC TTTATCGGTG CCGTCTGTCT TTTTTTACG	360
AAAAATCGGA CAGTCAATAA TATCGGACGC ATCCTCTTTG GTGTCGGTGG TATCTTTTTT	420
GCCCTCAATC TCATGAGCGG CGCAATGGCT CCACTCAAGG ATTTACAGGT CTTTAAGGAC	480
TATATGATTG AGCTAAGTAA GAATCCTGTT TTGGGTGTCT TTGTCGGTAC TGGCTTGACC	540
TTGCTAATTC AAGCTTCTTC GGCTACCATT GGGATTTTAC AAAACCTCTA CGCCGGCAAT	600
CTAATTGATC TACAGGGAGC TTTGCCAGTT CTATTTGGTG ACAATATCGG GACAACCAT	660
ACAGCCATCA TTGCCTCTTT AGGGGCTAAT ATTGCAGCTA AACGGGTAGC AGGAGCTCAT	720
GTTGCCTTCA ACGTTATCGG AACAGTTGTC TGCCTTATTT TTCTAGTTCC TTTTACTGTC	780
CTGATTCATT GGTTTGAAGC TACGCTAAAT CTAGACCGG AAATGACCAT CGCCTTTGCT	840
CACGGAACCT TTAATATTAC CAACACCAT GTCCAATTTC CATTTATCGG AGCTCTGGCT	900
TACTTTGTAA CCAAGATTAT TCCTGGAGAG GACGAGGTTG TCAAATACGA ACCCTTATAT	960

1306

CTTGATGAAC ATTTTCATCAA ACAGGCCCCA TCATCGCTC TAGGAAATGC TAAGAAAGAG	1020
CTCTTGCACT TAGGAAACTA CGCTGCTAAA GCCTTTGACC TTTCCTATAA GTACATCATT	1080
GACTTGGAATG AAAAAGTTGC TGAAAAAGGG CATAAAACCG AAGAAGCAAT TAACACCATC	1140
GATGAGCAAT TAACACGTTA TCTCATTGCC CTTTCAAGCG AAGCTCTCAG CAAAAAGAA	1200
AGTGAAGTGC TTACCAATAT CCTTGATTCC TCCCGTGATT TGGAACGGAT TGGAGACCAC	1260
ACGGAGGCTC TACTCAATCT GACTGACTAT CTTCACGGA AAAATGTTGA ATTTTCTGAT	1320
GCCGCCTTGA AAGAATTAGA GGAAGTTTAC CGCCAAACTA GTGACTTTAT CAAAGATGCT	1380
CTGGATAGTG TGGAAAACAA TGATATTGAA AAAGCACGCA GTCTTGTAGA ACGTCATGAA	1440
GCAATCAATA AGATAGAACG TGTCTCAGA AAAACCCACA TCAAACGCCT CAACAAAGGC	1500
GAATGTTCAA CACAAGCTGG GGTCAACTTT ATCGACATCA TCTCACAATA CACTCGTGTA	1560
TCAGACCACG CTATGAACCT TGCTGAAAAG GTTTTTCAG AACAAATCTA AGAACCAAGA	1620
AGCTATCCAT CATAATTGGA TGGCTTTTTA CTTTTCCTA AGCAAGACTA GGATGAATGA	1680
AACTGAAAGA GTATTCTGCA GATATATAGT CCCCAATTAT TCACCCCAA TCTAAAACC	1740
ATCCAGAATC CTTGCCTTAG CTTAGATCCT GGATGGTTTC TTTTTCACC CAATGGGTGT	1800
TTTTTACTAG ACAAAAAAGA GTTCCCCTT TATGGTATAA GTGTAGAAAA AAACACAAAA	1860
AGAAAGGAAA CTCACATGAA CAGTTTACCA AATCATCACT TCCAAAACAA GTCTTTTTAC	1920
CAACTATCTT TCGATGGAGG TCATTTAACC CAGTATGGTG GTCTTATCTT TTTTCAGGAA	1980
CTTTTTTCCC AGTTGAAACT AAAAGAGCGG ATTTCTAAGT ATTTAGTAAC GAATGACCAA	2040
CGCCGCTACT GTCGTTATTC GGATTCAGAT ATCCTTGTC AGTTCCTCTT TCAACTGTTA	2100
ACAGGTTATG GAACGGAATA TGCTTGTAAG GAATTGTCAG CTGATGCCTA CTTTCCAAAA	2160
TTGTTGGAAG GAGGGCAGCT TGCTTCACAG CCAACCTTAT CCCGTTTTCT TTCCAGAACT	2220
GACGAGGAAA CAGTCCATAG TTTGCGATGC CTCAACCTTG AATgGkCGAA TTCTTTTTAC	2280
AGTTTCACCA GCTAAACCAA CTCATTGTAG ATATCGATTC TACCCATTTC ACAAC	2335

(2) INFORMATION FOR SEQ ID NO: 276:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 752 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 276:

CGGATTCACCT GTTGTGACT AATCAATAAC ACAGTAGAAA ATCTCACAGC AGTCTATTAG	60
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1307

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TTGCTTTTCA TACTAGGCAA GTGACTGAGG CTTGTACTTG GGTACAGCAA GGGAGCTTAA      120
GGCCGTAGAA GAGAAAAATA GTAGACTGAA AACCCGCAAG ACTTCATCAT TTCGAGAAGT      180
GACGTGGGAG ATGAAAATCG ATTGAACCAC TTACAAGGAG AATAGAAAAT GGCTAAAAAA      240
AGCAAACAAC TTCGTGCTGC TCTTGAGAAA ATCGACAGCA CAAAAGCATA CAGTGTAGAA      300
GAAGCTGTAG CACTTGCAAA AGAAACTAAC TTTGCAAAAT TTGATGCAAC TGTAGAAGTT      360
GCTTACAACT TGAACATCGA CGTTAAAAAA GCTGACCAAC AAATCCGTGG AGCAATGGTA      420
TTGCCAAACG GTACTGGTAA AACTTCACGT GTTCTTGT TTTCGCACGTGG TGCAAAAGCT      480
GAAGAAGCAA AAGCTGTCTG TGCAGACTTT GTTGGTGAAG ATGACCTTGT TGCTAAAATC      540
AACGACGGTT GGTGACTT CGACGTAGtT ATCGCTACAC CTGATATGAT GGCTCTTGTT      600
GGACGTCTTG GACGTGTCCT TGGACCACGT AACTTGATGC CAAACCTTAA AACTGGTACT      660
GTAACAATGG ATGTTGGCAA AGCGGTTGAA GAGTCTAAAG GTGGTAAAAT CACTTACCGT      720
GCTGACCGTG CAGGTAACGT TCAAGCAATC AT                                          752

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(2) INFORMATION FOR SEQ ID NO: 277:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2643 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 277:

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GTCAACATTG ATTTCAAGGC TGTGCTTT CTATCTCCCC TTTTCATAA TGTATAATAA      60
AATGAAATAA TAACAGGACG AATTGATCGG GACAGTCAA TCGATTTCTA ACAATGTTTT      120
AGAAGTAGAG GTGTACTATT CTAGTTTCAA TCTACTATAT TTTCGTACAG GTGCTTCAAC      180
CATTTGAACG ATTTCAAATC CTTCTTTTGT GTAAAGATTC TGAGCTCTTT GATTGCTCTC      240
GAAGACATTT AGAGAAATAC TGTCTATATC TCTATTTTCA AATGCTAAAC TAACAAATTT      300
CCTTAAAGCC TTGCTACCTA AGCCTTGCTC CTGTTTCTGG GGGTTGATAA AAAATCTCCC      360
GATATGAAGA TTGCTGTCTT CTAGCCTGAT TTTCTGGATA AATCCCACAA ACTCTTGTTT      420
ATCAAAGATT GAAAAGACTC CTTCCAAGGC TTGAAGTGTC AGTAGAAAAG GAATCCTTGG      480
TCCCATCCAT TGTCTTGAA AGGATTTGCC TAGGGAGTTG GACCACTGGC ATACAAATG      540
AGCGTTTCT GTGCTCACCT TTTCTTCAA ACGAATTGTC ATCTTTTCCT CACCACCTTA      600
TCTATGTTTC TCCATTATAC TATTTCTCCC ATTTTACG AATAGATAAG TATGATTGAT      660

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1308

TTTTATTTT	TTCTCGTCGG	GAGCATTCTA	GCTTCCTTTC	TTGGTTTGGT	CATTGACCGT	720
TTTCCAGAGC	AATCCATTAT	CAGTTCAGCC	AGTCACTGCG	ATTCCTGTCA	GACTCCCTTG	780
CGTCCCTTAG	ATTTGATTCC	GATTCTCTCA	CAGGTCTTCA	ATCGCTTTCG	CTGTCGCTAC	840
TGCAAAGTTC	GCTATCCTGT	CTGGTATGCC	CTCTTTGAAT	TAAGCTTAGG	ACTCCTCTTT	900
CTGCTTTACT	CTTGGGGATG	GCTCTCCTTG	GGGCAAGTCG	TCCTAATCAC	CGCTGGTTTG	960
ACCTTGGGTA	TCTACGACTT	TCACCATCAG	GAATATCCCT	TACTGGTCTG	GATGACTTTC	1020
CAGCTAATCC	TAATAGCTTC	CTCTGGCTGG	AATCTGGTCA	TGGTCTCCTT	CCTCATACTT	1080
GGAATTTTGG	CTCATTTTAT	CGATATCCGC	ATGGGTGCAG	GGGATTTTCCT	CTTTTTAGCT	1140
TCTTGTGCTC	TCGTCTTTAG	CGTAACGGAG	TTACTGATCT	TGATTCAGTT	CGCTTCTGCG	1200
ACGGGTATCC	TGGCCTTTCT	CCTGCAAAAG	AAAAAGGAAA	GACTTCCTTT	CGTGCCTTTC	1260
CTCTTACTTG	CTACTTGTTT	GATTATTTTT	GGTAAGCTAC	TGCTTGTCTG	ATAAAATCCA	1320
ATTTCTGCCA	TATATCCTTC	ATGAAATTAT	TTCACAGTTA	AATTATAAAT	TATTTCTTTT	1380
GTACAAAGGG	ATGATGTTAT	CAAATCGATC	TGTTCTTCTA	TCTTCTTGAT	ACTGATCAAA	1440
AAATTTCATT	TCGACTGAAA	ATATTTTCGT	TATAAACTGT	AAACGAATAC	TTTGTTTAGA	1500
CATTATAGTC	GCTAGACTGA	CTAGATGATT	ACTCAAAACG	ACGTCCAGAA	TACTCTTTAC	1560
TTTGCTTGGT	TTTTTAACAA	AAATTTGATC	ATCCAAGGGT	TCAATCATTT	TGTAACCTTT	1620
TTGCGCAATT	TGACGATAAA	AGTAAGAATG	TTGCTTTGGA	GTCAATAATC	CTAACTTAAA	1680
AGCTCGATAC	TCATAAGCCT	GTATCGAAAC	ATTCAAATCC	GACTTCAATA	AAATATAACT	1740
ATCAGGATTG	CTGACACGCT	TGCCAACCCCT	CTCTTCAAAT	TTGACTAAAA	ACTCTTCTTT	1800
TGGCAATAAA	AAACATGATG	CAAAATAATT	TGCTTCTTGC	TCCAAACGAT	CGCCATCTTC	1860
ATTCATATCT	TTATATTTAT	GTAAAAGAAT	ATGTCCTAGC	TCATGAGCTA	AGTCAAAATT	1920
TCGACGTACA	GATGATTTAT	TCGTTCTTAA	CACAAATATA	GGTCTTCCCA	ATTTTGACCA	1980
TGCGCTATAA	GCATCAGCTT	GGCCATTAAT	TAATCGTTCC	ACGATATAGA	TGCCTGAACG	2040
TTCTAATTTA	TAAAGCAAAT	CATGATTATC	TTTTGAAATA	CCTAATTTTT	CCCTGGCATA	2100
AAGAGCCAAT	TCCTCAATGG	ATTCTCCCTT	ATGATAAGAT	TCACTCACTA	CATTACTTAG	2160
GTCATGAATT	ATAATATTAG	GTATAATTAC	AAAACTTTCA	AAATAATCAA	TCAAACATATC	2220
TACCTTATGT	AAATACATAG	TTTGAATATC	TATTGTTTTT	CGTGTGCTA	GGTCTGCATT	2280
TCTAAAGGCA	ATTACAGAAG	AATCAAATCG	AATGCTCTCT	TCTTCCTGTT	CAAAATAAGT	2340
TAAATCAACA	TGAAATTGGT	TGGCCAAATG	CATTTTGGTT	GATAATTTAG	GTTTCGTTTC	2400
GTTGGACTCA	AACTGCCAAA	TGGCTTGTTT	CGTTAAATTA	ATTCTCTGAG	CTAATTCTGC	2460

1309

TCTACTTAAA CCATTTAACA GCCGTAATTC TTTCAATACC CGACCATTAAC ACATTTACAT	2520
ACTCCTTACT ACTTTTGACC TTCTTGTTTT TCTATTCTTG GAATAATTTC AAAATCTTCT	2580
GTTTCCGATA ATTCTGAAAA ATTAGGAATA TCTTGATATT TAGCTTCTTC GAAATGGTAC	2640
GGG	2643

(2) INFORMATION FOR SEQ ID NO: 278:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 582 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 278:

TGACCAGTGG CAAAATGGCT ATCCAAATGC AGATGTTATT ATCGATGATA TCATCTCAGG	60
GCAAGCCTAC GTAGCCTTGG AAGAGGGAGA ACTGCTAGCC TATGCTGCTG TGACCAAGAG	120
TCCAGAGGAG GCCTATGAAG CTATTTATGA GGGAACTGG CAAGCTGGAG AGTCAGAGTA	180
TCTAGTCTTT CACCGTATTG CTGTGGCAGC AGATGTGCAG GGAAaAGGAG TTGCTCAAAC	240
CTTCTTAGAG GGCTTGATTG AAGGTTTTGA TTATCTTGAT TTTCGCTCAG ATACGCATGC	300
TGAAAACAAG GTTATGCAAC ATATTTTTGA AAAACTTGGT TTTAAACAAG TCGGTAAGAT	360
GCCAGTAGAT GGCGAACGCT TGGCCTATCA AAAATTAAAG AAATAATGCA AAAGAAGTAT	420
GTA AAAATCC TCTACTCTC ACCAATTGGT ATTCTATCAC TTGTAGCTGA TGACCATTAT	480
TTGTATGGAA TTTGGGTCA GGAGCAGAAG CATTTTGAGA GGGGACTAGG AGATGAAACG	540
ATAGAAGAAG TTGTWAGTCA TCCTATTTTA GACCCAGTTA TT	582

(2) INFORMATION FOR SEQ ID NO: 279:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 554 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 279:

CCCAAGCTAC TAAGAGACTA AAAGTTGCTA GAGAAGCAAG AGAAAGTGTG AATCTTTTTA	60
ATTTTCATGAT GAATTCCTT TCTGCTACCA ATTTAGAGAA ATTTTCTCTA ACCAGCAATT	120
CCCCTAGTAT AACAAGTTCA AAAAATGGAG TCAATTTATC TGCTCACGGT CCAGCAGGTA	180

1310

GCCCCGTACT TCTGAGATAA AATAGAGAGA CCCTGTAACG AACAGCAAGT CTTGAGCGTC	240
TGCCCTTTCT TCAAAATCGC TGATAAATTC TCGGTAAGAA GAAACTATAT CGTAACCTGT	300
CACATCCCTT TCGTCCAAAG CCCCTTGATA GTCAAAGCCG GTCACCTTGA GTTCCACCTG	360
AGGCAATTTT TCAGTCAGAT AACCCAACAT CCCTTGATAA TCCTTACGTT TCAAGGATCC	420
AAAGAGGATT TGAGGTCGAT AGCCTTCCTG CTCTTTTCTT TTGATAAACT CAGCCAAGCG	480
AGTCAAGGCA GGGAGGTTAT GAGCACCATC CAAATAAATC TGTGGGCGAA TACGCTCCAA	540
GCGAsCAGCC CAAT	554

(2) INFORMATION FOR SEQ ID NO: 280:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 766 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 280:

CCGGTTTTTC AAATGAATTT CTGGTTGTG GCTAAAAAT ATGCTACACT ATCAATATGA	60
AAATTTTAAT CCAACAGCA AAAGAAATGA ACACAGACTT CCCAAGTATC GAGGCAATTC	120
CTTTAAAACC AGAAAGTCAG GCCGTGCTTG ATGCCTTGGC TCTCTATTCT GCCAGTCAAT	180
TGGAGAGTTT CTACAAGGTA TCAGCTGAGA AAGCGGCGGA AGAATTTCAA AATATCCAAG	240
CTTTGAAAAG GCAAACCTGCT CAACACTATC CAGCCTTGAA ACTTTTGTGAT GGGCTTATGT	300
ACCGCAACAT TAAGAGAGAT AAGCTGACCG AGGCGGAACA AGATTATCTT GAAAATCATG	360
TTTTCAATTAC CTCGGCTTTG TACGGTGTG TTCCAGTCTT GTCACCCATG GCTCCTCACC	420
GTTTGGATTT TTTGATGAAA TTAAGAGTCG CTGGTAAGAC TTTGAAGAGC CATTTGAAGG	480
CAGCCTATGA TGAAACTCTG AAGAAGGAAG AAGTGATTTT CTCTCTCTTG TCATCAGAGT	540
TTGAGACTGT ATTTTCTAAG GAAATCAGAG CAAAGATGGT GACCTTCAA TTCATGGAGG	600
ATAGAGGCGG TCAGCTGAAG ATTCACTCAA CTATCTCCAA GAAAGCGCGC GGGGCCTTTC	660
TAACAGCTTT AATAGAAAAT CAAGTACAAA CTGTGGGGG AGCACGTCGC TTGAACCTTG	720
CTGGATTTGT TTACCGAGAA GATTTGTAC AACACAGGG GGATGG	766

(2) INFORMATION FOR SEQ ID NO: 281:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 901 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

1311

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 281:

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CCGGCCACGG TTCCATCCAA CTTACAGGT GTGCACTGA TTGTGTATGT AATTGTCACT      60
AACGGTAGAA TTTCACCTAT CCCTCCTATC TGCTCGCAGT ACCCGCAGAC TTTCTGAAAG      120
AAGAAGATAA CCTACTTATC CGTTGCTATG ATTATACTAA AGTTTCTACT TTTTGCAAA      180
TAGATTTTTA AATTTTGGC TAATTGTCTG AATCAGGGTC GGAAGTTTGA CGACCTTGTC      240
ATTGCCTAGT TTTTCGCGTG CAATTTGAG AATGGCACCT GAGTCTTTTG AAGCAAAGAG      300
GAATTTTCCT TTGTCTGTAA AGACTTCGAA GTGGCGGCTG ATTTGCGTC CAGTGACATT      360
GGCTCCAATC TGATTGATAT GGCTCCAAGG AATCTGGATA AATTGTTTCA CATTGACATC      420
TGGGTAAAAT TCCAAAGCCT GATCTCCGAC AAGGAATTC CCAACTTTCC CAGCGATAGA      480
GAGGTAGGAA GTGCCTGTCG TACTGAGGAG TACTGTTTTG TTAAGTGATT GGGCCATGCT      540
TAGTCTTCCT TACTTTCTCC AAAAAAGGCA TTGTAGAGGG CTTTAATTGC TGCTTTCTCT      600
TGGTCTTTAT TGACAACAAA CATAATAGAA ACTTCACTAG AACCTTGAGA CATCATCTGG      660
ATGTTGATTT TGTTTTCAGA TAGAGCGCGT GTCGCAGTAG CAGTCACTCC GATATGGCTC      720
TTCATTTTTT CACCAACAAT CATAATGATA GAAAGGTCGT GTTCGATTTC TGCATGATCT      780
ACTTTAGCCT TTTGAACCAA CTGACGCAGG ATTTCTTCTT CCTTGATGGG AGTTAGTTGG      840
CGAGAACGGA GAATGATAGA AAGAWCGTCG ATACCTGTTG GCATATGTTT CCAACCGATG      900
T                                                                                   901

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(2) INFORMATION FOR SEQ ID NO: 282:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1765 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 282:

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CCCTGTTACG TGGATAATAG GGTAAGACTG CTCAGGATTT CCTAACAAAT CCACCGCTTG      60
CTGCATTCTGA CCCAACCTG ATCGAAAATT CAAACCAATC CGACTATGGA GCCATTCTTC      120
TACTTCAAAC ATACACATCT CCTTGACAAA AGTCCAATCA ATTATCGCAT TAAAGTATGG      180
TTACTAATAA AAACAAGGCC AGGATTTTCG TCCCGACCTC TTACCTGGTT AGCTAATAAC      240
TAGCTACTAT GAATGTGAAT ATGGGCTAAA AACATCCACT GGACGTTCCA ACTCTTCCCC      300

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1312

ATTCTCTGGGA GTTGGGGTAA AAATGTTTAC TGGACGTTCC AACTCTTCCC CATTTCTGGG	360
AGTTGGGCTG ATACAGTCTC CCAGACTGTA TCACTCCTCC ATAAAGCTGT TGAAGACTTC	420
TTCAATCATG TTCCATTTCGT CTTCTGAGTC TTCTGGGATT GGTGCAATT CGCCTTCTGT	480
TCCATCTTCG TTTTCGATGA ATGAGTAAGC TTGGATTTC AACTGTCCGT CTTCGTCTTC	540
TTCTGCGTTA ACTGGTACTA GAAGAACATA GTTTTTACCA AATTCTTCTT TTCCATCAAT	600
TGTCAAAAGG ATTTCAAACA AGGTTTCATT TCCTTGCTCA TCTACTAGTG TGATTAGTTC	660
ACGTTCTTCG TGGTCGTGGT TATGATCGTG TGACATAGCC TCGCCTTTAT ATTAAATTT	720
TCTATCTAAA TAATTTTGTA AAATCAGCTG AGCTGCTAAC TTATCAATGA CTTTCTTGCG	780
CTTATTGCGA CTGATATCTG CTTGTTCAAT CAACATGCGC TCAGCAGCCA CTGTTGTCAA	840
GCGTTCATCC TGATAGTCTA CTGGTAAACC AAAAACTCT TCTAGCTTTG CTCCGTAGCT	900
TGACTAGCTT CTACGCGCGG TCCACTTGTA TTGTTTCATGT TTTTAGGCAA GCCCACTACA	960
AATCGTTCCA CCTTGTAAGT ATCAACCAAT TCCTTAACGC GGTCAAAACC AAATTGGCCT	1020
TGTTCTTCAT TTATCTGGAT GATTTCAAGC CCTTGAGCTG TAAAACCAAG CGGATCGCTA	1080
ATCGCCACCC CTACCGTTTT TGAACCGACG TCCAATCCCA TAATTCTCAT AGGTTATAGA	1140
TGACTCCTT GTCCTTTGAG GTAGTAGCGA ACCAATTCCT CAACGATTTC ATCACGCTCA	1200
TACTTACGGA TTTGATTTG TGCATTATTA TAACGAGGAA CGTAGGCAGG GTCTCCACTC	1260
AATACGTAAC CTACGATTG GTTAATTGGG TTGTaCCCT TATCGTTCAA CGAAGCATAA	1320
ACATCTGTCA AAGTTTCGCT AATTTCTTTT TTATTGGAAT CGTCCAATTT AAAACGTA	1380
GTTTCTTCAG TAAATCCCAT TCTAACACCC TCTTTCCTTA GAATAGTACC ATTATAGCAT	1440
AATTCCTTAC CTTCTACAAT TCAGGCAGTC TATTTATTG GATTTTCTAT TGTTCTGTG	1500
CGCCATTTGC CAATCTATCT GAAATATATT TGCTTGGTTC ATTTTTCAAA AGATTTTCCA	1560
AACCAATATT CTTCAGATGT TCCAACCTGG AAGCCTTCTT GACATCCAGA ACTTGAAAAT	1620
CAAACTAGT CGTTGTTTGA AGTTCCGTTG CGCTCAATAG TTTTGTTC AAGTTTGAAAC	1680
CTGCCAATTT ACGAGCTTCA ATGATAGACT TATCCTTCTC CTCCGCTTCA AGAAGAGCTT	1740
TTTGAGTTTC CTCCACTCCA TGTG	1765

(2) INFORMATION FOR SEQ ID NO: 283:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1346 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

1313

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 283:

CTTATCCATT CACTTCTCTG TCTGTTATTC TATAAATCTT ACTCCTAAGT ATACCACATT	60
TGCCCCTAGA TGTGAACGAG AGAAACGCTC TAGACATTGC CAAGAAGGAA AAAAAAGGGT	120
ACAATGTAAC AAAATCAAGG GAGGTCTGGA ATGAAGAAAC AAAGCAAGTA CAAAGAGGTC	180
GTTTCCTATC TGAAAAATGG TATCGAGTCT GGACGATTTC CGACGGGTAG TCGCCTGCCT	240
TCTATCCGTC AACTGAGCCT TGACTTTCAC TGACGCAAGG ACACCATTCA ACGAGCCCTG	300
CTGGAATTAC GGCACGAACA ATACCTCTAT GCCAAGCCTC AGAGTGGCTA CTATGTATTA	360
GAACAAGGGC AACATCAAGA CCTAGAAATC GAGGTTACCG ACGAACATGC CAGTGCCTAT	420
GACGATTTCG GACTCTGTGT CAATGAAACC TTGATTGGCC GAGAAAACTA CCTCTTCAAC	480
TACTATGACA ATCAAGAAGG ATTAGAAGAC CTAAGACAGT CCATTACACAA ACTCCTCTTT	540
GAGCAAGCTC TCTACTGCAA GGCTAACCAA CTAGTACTGA CTTCTGGAAC CCAACAAGCC	600
TTGTTTATCC TCTCTCAAAT ATCCTTTCCT AGACAAGCCA AGGAAATCTT GGTGGAACAG	660
CCAACCTACC ATCGGATGAA TCGCCTCTTG ATTGCACAGG GGCTGGACTA TCAAACGATT	720
GAACGAGGCA TTGATGGGAT TGACTTGGAG GAGCTGGAAG GCCACTTCAA AACAGGAAAA	780
ATTAAGTTTT TCTACACCAT TCCCCGATTT CACTATCCCC TGGGACATTC CTATTCTGAG	840
CAAGACAAAC GATCTATTCT TAACTTAGCT GCCAAGTATG ATGTCTATAT CGTAGAGGAC	900
GATTATCTGG GTGATTGGA CTCCAAGAAG GGCCAAACCT TCCACTATCT TGATACAGAG	960
GAGCGTGTCA TTTATATCAA GTCCTTCTCG ACCAGCCTTT TTCCTGCCCT TCGTATTACA	1020
GCACTCATTG TTCCAAATGC TATCAAAGAA GCATTTGTGG CCTACAAAAA TATCCTAGAC	1080
TACGACAGCA ACCTCATTAT GCAAAAGGCC CTGTCACTCT ATATTGACAG TCAATTGTTT	1140
GAAAAAATC GTTTGGCTCG CTTGACCAAT CATGAATCTT ACCAAAAACA AATCGAGGAA	1200
AGGATAACTA AAACACCTTG TCCCCTTCCT CATTATCCCC TACACGATGG yTTATTGCTA	1260
GACCTGAGAC AGTATCCTAA AATCGCCAGT CTCAAACACA GTCAACTGGG cTTGGACTTC	1320
TTTGAAGAGG CCTATTTAAG CACCTG	1346

(2) INFORMATION FOR SEQ ID NO: 284:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 900 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

1314

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 284:

CTATATTCAG AATATGCCAA AAATTCGGAA TGGTATAAAT TTGCGGAGGG TTCATTGAC	60
ATATTTAGAA AACTCCCCA AAGAATTAAT TTTAAGAAAG ATTTTCTAG AATTTGGCC	120
CCCTTTATTA TTAATTTGCT TAAATTAATC AATAATTATC TAGAGAATAA AGAATACGAG	180
TGGATTGACA AGAATGGAAA TATTTTTTCC TCTCTAGTAT TTTATTTAGA AGATTTAATC	240
TATCCTTGGA TTGTTAAACC TTTGGTTTTA GAGATAAAT CATTCGTGA AAAAGGTTA	300
CTTGAAGGGG AATCGGAGCA GCAACGGTAC AAATATTTTA TAACATTGTT TGACAAGGAA	360
GAGAAATAT TAAATTTTTA TAACAAATAT CCCGTTTAC TGAGGCAAAT ATCGGAGTCT	420
TGTCTTCGGT TCTATACTTA TTTTATAGAA ATTTATCAA ATTTAGAAAA TGATTTTAGT	480
GTGCTAGAAG AAGAATTAGG GCTAAGGGG AAATTAAATG ATATAAAATT TGGAAAGGGT	540
GATACACACA GCCAAGGAAA AACTGTTTTG ATACTCTTCT TTGATGACGC GAAAATTGTT	600
TACAAGCCTA AAAATTTAAT AATCAATAAC TCACTAAATA CTATTGCTGA GTATATCCGA	660
AAGGTTGATG AAAAAATTAG GATAAGAATA CCTCGAACTA TTGCTTATTC GGATCACAGC	720
TATGAAGAAT TTATTGATTA TCTACCTCTA GAGCAAAAGA AAAATTTACC TGAATATTAT	780
TATAATTTTG GTGTGCTTTT AGCATTTATA TATTTATTTA ATGGGAGTGA TATACATTTT	840
GAAAATTTAA TTTCTATGG AGATATGCCT GTAATAATAG ACTTTGAAAC AATGTTACGG	900

(2) INFORMATION FOR SEQ ID NO: 285:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 862 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 285:

TTATTTAGCA GAGGCAGTTT TAAATGTGAA GGATTGGTC AGTCAAACAG TTTTATCA	60
GCAGATTATT GGTTAGAAA TCCTATCTCA AACGGATACA GAGGTCGTTT TGGGACTTGG	120
AGGAAAAGCC TTGGTACACT TGATTCAAGC ACAAGAGGGT GGAGAAGTAA GGAACATTA	180
TGGTCTTTAC CATCTGGCTA TTCTTTTGCC GACACGAAAG GCTTTGGCGG ATGTCTTGAA	240
GCACCTGACG GATTACAGA TTCCTCTTGT TGGCGGTGCA GATCACGGTT ACAGTGAGGC	300
CCTTTACTTA GAGGACTTGG AGGGAAATGG CATTGAAGTC TATCGAGATA AGCCAGTTTC	360
CACATGGGAT ATTCGAGAAG ATGGACGTAT TATCGGGGTG ACTGAAGTCC TTGCGGCTCA	420
GGATATCTAT GAGTTGGGGG AAAGAGTAGA GCCTTTTATC CTAGCAGAGG GTACGAGAAT	480

1315

GGGGCATATT CATCTTCTG TCAAGGATAG TCGAAAGTCC AGACAGTTT ATCAAACGGT 540
 GTTAGGGCTC GAGGATAAAT TCAGTGTGCC TAGTGCTAGT TGGATCGCAG CTGGGGACTA 600
 CCATCATCAT TTAGCAGTCA ACGAATGGGG AGGAAAAGGT CTGGATCCGC GTAAACAAGT 660
 CCTACCAGGT TTAGCCTACT ATGTCATCGA AGTCGCACAT AAAGAAGAAC TGTTAACGAT 720
 TGCCCAACGA GCACAAGAAG TTGACGCACC AATCAAATGG ATGACATCGA TCCAATTGGA 780
 AATCACAGAC TCAGATGGCA TCGTGACCCG TATTCGTTTA GCTAGATAGA TGGTATGTGA 840
 TGAAGGTAGA GCATCAATTG TA 862

(2) INFORMATION FOR SEQ ID NO: 286:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 650 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 286:

TCGTTTACAA GATCGCTAAA ATGCATCTCA TGATCGCGAC CACGAATTCC AAGATAGCAC 60
 GCGCTACCTC AATCATAGAT AGTTCACTTT TTTCTGCCC AGCAAATACT TCTAATTCCA 120
 AAGCGTTTCT CCTCATTTAT ACTACTATCG CCAGAGCGAA CAGACTCTGA CCTCATTTTA 180
 TCATTTACTC TTTATTTTAC GATAATTTTG CGGAATAGTC AAAGGTTAAG GGGGAGAAAG 240
 TGGCAGGATT AGACTAATTC CAATATAAAA CTCATTCCTT TTTCTGTTGC TCCATTTTCC 300
 ACAAAATCCAA GCGACTTGAA ACACCTCCTA GAAGCATGAT TGTAGGTGTA GATTTTCTTG 360
 ACTCTCAATT CTTTCCATCC TTTTACTCGA GCCAATTCAA TCAAAGCACT TAGAATCTTT 420
 TTTCCAAGTC CTCGATGTTG GTAAGCGGAA TTCCAATCA CAATGGGGAG ATTATCCTGA 480
 GATAGTGTA TATCCCAAT TGGAAACCAT TCTCCCTTCT CCTTGACTTC AATCCAAAAA 540
 AGCTCACCAT GCCGATyCAr ATAGGAATAC ATGGCTTCCA AGGTCGcttG ACTGTAAGGA 600
 AGCTTCACCC CATCTACGAG GtAAcCAAGT TCACATCCGT GATACCAAGC 650

(2) INFORMATION FOR SEQ ID NO: 287:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1119 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

1316

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 287:

GATAGCAATC CGCTTCAGAA ACTTCTCGCT TACCTCTAAC TCCGATCGCT AGTTTGGGAG	60
AAGATACTTC CATTCTCATA CTATCTGTTG GCTTTGCAGG CTGTAAAAAC AACTTTTCTC	120
TTGCTACTTC CTGAAAATCT GAATCTTGCA GTTCTTTGCT TTCAAAATAG TCCTGTACTC	180
GCTCCACATC AAAATTCCCA GCTAAAGACA GAGACATGTT TACAGGTTTG TAAAACTTTG	240
TAAAAATTTT TTGCAAATTA GTTAGATTGA TTTGGGAAAT GGAATCCTCA CTTCCAACCTA	300
TATCAGTTGC TAAAGGTGTA CCAGGATACA AATTCGCTAA AGTTGAAAAG AATAAACACG	360
AATCTGGATC ATCTTGGTAC ATTTCTCGTT CTTGCTGAAT AATATCCTGC TCTGTCAGAA	420
TGGAAGCTTC AGTAAAGTGT GCTGATGTTA CCAATTCATC AAGTAAATCT AAATTTTCTA	480
AAAAATAATC CGTTGCTGAA AAAAGATAGT TTGTTTGTGT AAAGCTTGTA AAGGCATTAC	540
TATCTGCACC TAGACTCGTA AAAGCCGACA TCAAATCACT AGAATCTTCT CTCTCAAATA	600
ATTTATGTTC AAGAAAATGA GCAATTCCTC CAGGATATTG TTTTACATCT CCGTCAACTT	660
CTGTGACAAA CGTATCTACC GAACCAAACCT GTACAGTGAC ACTCCCGTAA ACCTCTTTAA	720
ATTCCTTTTT AGGCAAAAGA GCAACTGTCA ATCCGTTGGC CAAACGAGTT CGATAAACCA	780
TTTCTTTTAC AGCTGGATAG TATTTTCTT CAAAAACAAC CTTTGTCAAT CTATTCCTTC	840
CATAAAGTAA ATCGCTTGTA GTTTCACATT ATTAGCTACT CTACAAATAG CATCTTTGTC	900
AATTTGTTCA AGCTTTGCAA TCCAACTTTT AAAGTCTGCT GAAGATTTTC CAAATAAGGC	960
ATTTTGATAA GCACGTTCAA TCAATGAAGA ATGATTATCT TGAGAAAGTA ACAACGACCA	1020
ACGAATCATT TCCTTGGTCT GATTTAACTC AAATCTGTGA AAAAAACCTT TTTTAAATC	1080
AAGCCGTTGA TTATTCATCA ATTTACGAGC CTGGTTACG	1119

(2) INFORMATION FOR SEQ ID NO: 288:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 540 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 288:

ACGCCCTCGC GGGGACATGA CGAATTCCTC GTTCATCACG AAGGCCGCGG AGGAGTGGGG	60
GGTGCCGTCC AAGTCAAAAG CGGCCCCACA TCGATTCAGT TCCCCGACGA ACAGCCCTTT	120
CCCCCAGCGT TCCTGGCTTT GCAACCGTTT CACAACAGCC TCGTAAAGTA GGCCGGACAA	180
GGCAGACGGA CTCAAAGGA GTTCTTCCAT CTGCAAGTGC GCCTGCGTTA TGTGATCCCC	240

1317

GTCTTTTGCA TGTGTGTGGC ATGAATGCTG TTCCCAATCC CACTCCAGAA CATTCTCCTC	300
AAAAGTGCGC AACGTCGCCC TGAATGAATC CTGCCTTGTA GTCGTGACCA TTCCTATGAA	360
GGGTCGCAGA GGATTTTCCC CGAGTGCAAG CGCATCCTCC GGCTCAAATC GGGTGCATTT	420
CACAGTCCCG CTCAACGCTA GCCCGATCCC TTTTGGCAT GGTGACTCAA GCGTCCTTTC	480
AAACAAAAGC TCCTCATCCG CTCCAACCGG CCCGACGTAG ACGCGTAGAC CGAAGTCGTC	540

(2) INFORMATION FOR SEQ ID NO: 289:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1949 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 289:

AAAGAATTCG ACCAATTCAA GGTGAGGCA TCGCAAATA TGGACTGTTT CCCCCTCAGT	60
TCTGGACAGA AAACGGGATA AGGTTGGCTG TGAAGCAAGC TGCCCTCCTA CCAACAATTT	120
TGGAAAGTAG GCATCAGCTG ACAATTCTTT ACAAGCATAG TCCGTTCCAT AACCTGTTAA	180
CAGTTGAAAG AGGAACTGGA CAAGGATATC TGAATCCGAA TAACGACAGT AGCGGCGTTG	240
GTCATTCGTT ACTAAATACT TAGAAATCCG CTCTTTTAGT TTCAACTGGG AAAAAAGTTC	300
CTGAAAAAAG ATAAGACCAC CATACTGGGT TAAATGACCT CCATCGAAAG ATAGTTGGTA	360
AAAAGACTTG TTTTGGAAGT GATGATTGG TAAACTGTTC ATGTGAGTTT CCTTCTTTT	420
TGTGTTTTTT TCTACACTTA TACCATAAAG GGGAACTCT TTTTGTCTA GTAAAAACA	480
CCCATTGGGT GAAAAAGAA ACCATCCAGG ATCTAAGCTA AGGCAAGGAT TCTGGATGGT	540
TTTGTAGATT GGGGTGAATA ATTGGGGTTT TACAATATCA ACTCCCATGA TAGTCATGAG	600
ATGACTCTTC ACGAATTGAC GTGATGACTG TCCTTCCTTT TGCATAATTA CCTCCGAAAC	660
ACAAAAAAG GGGTAGACAA TCTAGTGTCT ACCCCCGAAA GTTTATTAAA AAAAAATCC	720
TGCCAAAGAA TTTTGGCAG GAAACCAAT CAATTTATCA GTTCTATCA ATCGCTTATC	780
GCTCTCAAAG ACTGGTAAAT AGGGAATCCG CAATCAAATT GCGATACTCT ATTATTTAAG	840
AGTAACTGAA GCTCCAGCTT CTTCCAATTT AGCTTTGATT TCTTCAGCTT CTGCAGTTGC	900
AACGCCTTCT TTAACAAGTG CTGGTGCACC GTCAACAAGT TCTTTAGCTT CTTTAAGACC	960
AAGACCAGTG ATTTACGTA CAACTTTGAT AACGCCAACT TTTTGTGCGC CTGCAGATGT	1020
CAATTCACG TCGAATGAAT CTTTAGCAGC ACCAGCATCA GCTGCATCAG CTGCAGCAAC	1080

1318

AGCTACAGGA GCAGCTGCAG TTACACCAAA TTCTTCTTCG ATAGCTTTTA CAAGGTCGTT	1140
CAATTCAAGG ATTGAAGCTT CTTTAATTTT AGCAATAATG TTTTCAATGT TCAATGCCAT	1200
TGTTATTTCC TCCAAATAAG TTTTAAATTT TATAATAGTT TTTTTCGTAG CTAGkstACG	1260
CTGTGTAGCT TAAGATTAAG CCGCGTCTTC TTTGCTTTCT GCAACCGCTT TGA CTGCAAG	1320
AGCAACGTTG CGCACTGGCG CTTGAAGTAC AGAAAGGAGC ATAGAAAGAA GTCCTTCGCG	1380
GTTTGGAAGA GTTGCAAGTG CAAGAATCTC TTCTTTAGAT GCGACAGCGC CTTCGATTGC	1440
ACCACCTTTA ATTTCAAGTG CTTCAGCGTT TTTAGAAAAG TC GTTCAAGA TTTTCGCTGG	1500
TGCGATAACA TCTTCATTAG AAAATGCTAC TGCAGATGGT CCAACAAATA CAGATGCAAG	1560
ATCTTCAAGA CCAGCTTTTT CAGCTGCACG ACGCAAGATT GAGTTTTTAA TAACTTTATA	1620
CTCAACTTCG CTCCACGAA GCTCACGACG AAGAACTGTA TCTTGCTCAA CTGTCAAACC	1680
ACGAGCGTCT ACAACGACGA TAGATGCAGC AGCTTTCATT TTTTCAGCTA tACGTCAACT	1740
AGTTCGCTT TTTAGCAAT AATTGCTTCA CTCATTAGTG TGTTCACCTC CGTAATTATT	1800
TTGCTTGGGG AATTTTTCAA AAAGAAAAAC GCGCCCAATC CTAGACACGA AAGTACAATA	1860
CGCTTCTTTT TACATGATAC GTTTTGTCTC CGGTAGGATA TTTATGAGTC GAGCTCCCCT	1920
ACTGTCTTAG GCAGTTTTTT TAGATACGG	1949

(2) INFORMATION FOR SEQ ID NO: 290:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1023 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 290:

GGACTGTTTG ATCTTATACA GTAGCTGCTT GATCCAAGCT TTCACCGATA GCGGCTAGGC	60
GCTCGATAAC TTCAGCTTGT GTCAATTCAT TTTTGAAC ATAGCGGTTA CGTGGGTGAA	120
CACGGCACTC GTGTGAGCAT CCACGAAGGT ACTTGCTCTC ATTTCTTCT GATGTCAAGA	180
TACGACGTT ACAGATGGA TTTCCACAGT TGACATAACG TTCACATGGT GTTCCATCAA	240
ACCAGTCTTT CCCTACGATA GTTGGGTGTA CATGGTTGAC ATCAACGGCA ATACGCTCGT	300
CAAAGACGTA CATTTTCCCA TCCCAAAGCT CACCTGAAC TTCTGGGTCT TTACCGTAAG	360
TTGCGATTCC TCCGTGCAAT TGGCCGACAT CTTGTAGCC TTCACGGACC ATCCAGCCTG	420
AGAATTTCTC ACAGCGAACG CCACCTGTAC AGTAAACCAC GACACGCTTG TCCATGAATT	480
TTTCCTTGTT ATCACGGACC CATTGTGGTA ACTCACGGAA GTTGCGAATA TCTGGGCGAA	540

1319

TAGCTCCACG GAAATGTCCT AGGTCGTACT CATAATCGTT ACGTGTGTCA AGGACAACGG	600
TATCTTTATC AAGAAGCGCT TCTTTGAACT CTTTGGGAGA CAAGTAAGCA CCTGTTGTTT	660
CAAGTGGGTT GATGTCATTG TCAAAGTCGT TGTCTTCCAA ACCAAGGTGG ACAATTTCTT	720
TCTGTAGCG AACAAACATC TTCTTGAAGG CTGTTCATT TTCTTCGTCA ATCTTGAACC	780
AGAGTTCTTC CATTCCTGGA AGGCTGTGAA CGTAGTCCAT GTATTTTGA GTTGTTCAT	840
AGTCACCTGA AACTGTTCCG TTAATTCCT CGTCAGCGAC TAGGATACGG CCTTTAAGGn	900
CGATTGATTT ACAGAAAGCC AAGTGGTCTG CAGCAAATTG CTCTGCATTT TCAATTGGAG	960
TATAAAGGTA GTAAAGTAAG ACACGAATAT CTTTgkCaw AAGATTGTA TCTCTTATC	1020
TAT	1023

(2) INFORMATION FOR SEQ ID NO: 291:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 3831 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 291:

ACTATGAACA AGACCCAGAA AAAGTAGCCT TATTTCTTAA GAATTTTAAAT AGTTTAAAGC	60
ACCTAGCACC TGTTTAGATT GACGAAACAG GATTCGATAC TTATTTTAT CGAGAATATG	120
GTCGCTCATT AAAAGGTCAA TTAATAAGAG GCAAAGTATC TGGAAGAAGA TATCAGAGGA	180
TTTCTTTGGT TGCAGGTCTA ACAAATGGTG AATTAATCGC TCCAATGACT TACGAAGAGA	240
CGATGACGAG CGACTTTTTT GAAGCTTGGT TTCAGAATTT TCTCTTACCA ACATTAAACA	300
CACCATCGGT TATTATTATG GATAATGTAA GATTCCATAG AATGGGGAAG CTAGAACTTT	360
TATGCGAAGA GTTTGGGCAT AAACCTTTTAC CTCTTCCTCC CTACTCGCCT GAGTACAATC	420
CTATTGAGAA AACATGGGCT CATATCAAAA AGCACCTCAA AAAGGTATTA CCAAGTTGCA	480
ATACCTTTTA CGAGGCTTTT TTATCCTGCT CTTGTTTCAA TTGACTATAT TAGAGGCGAG	540
ACATTTTTCG GTTCTTTGTC AACTGTAGTG GGTGAAGAA AGCGAAGATC TAGAAAGGAC	600
AAATTCGTC CTTTCTTTT TGAAGTTTTC AAAGTTCCTA AAACCAAAGG CATTGTGCTT	660
GATAAGTTG ATGAGATTAT TGGTGGCTTC CAGTTTGGCG TTGGAATAAG GTAATTGAAG	720
GGCGTTGACG ATTTTCTCTT TATCTTTGAG GAAGGTTTTA AACAAAGTCT GAAACAGAGG	780
TGGAAAAGCA AGAGCTGATA GAGATTATAG TGGTGTAA AGTCTTCGGA ATAGCTCAAA	840

1320

AGTTTATCTA GAATTTCTTT ATTAGTCAAG TGCATACGAA AAGTAGGGCG ATAAAATCGT	900
TTATCACTCA GTTTCGACT ATCTTGTTGA ATGAGCTTCC AGTAGCGCTT GATAGCCTTG	960
TATTCATGGG ATTTCCGATG ATGGCTTGTC TTCTGCTCTC AAGAACAGTT ATGATATTGA	1020
GTTTATCAAA GTCCTGAGCA ATAAAGCTCA TCTCCATCTC CCGATTGAAA CAGTCACTCC	1080
CCGGACTGTT TCAACsTCCT AGGACATAAT CTCAGGAAGA CGCGAAAAAT CATGCTCAAA	1140
GTGAAAATCA TTGTCTTGC GAATGACAGT TGAAGTTGAA ATAGACAACT GATGATCAAT	1200
GTCGGTCATA GAAGTCTTTT TAATTAGCTT CTGAGCAATC TTTTGTTGA TGATACAAGG	1260
AATTTGATGA TTCTTCTTGA CGATAGAAGT CTCAGCGAGC TCCATTTTTC AGCAATGATA	1320
GCACTTAAAA CGGCCCTTTC TAAGAAGAAT TCTAGTTTGA ATTTTTTTAT ACTAGAAAAAT	1380
CAGAACCATA ATACCTATAT AAAAAATTA TAGTTCTAAT AGGATTTACC CAAAAGTTTT	1440
AAGGCGGTCT TTTTAGAACT TTAATTGTTT GAAATTTAGG TAGCAAATTT GTTCTATTT	1500
TGTCAACTTT TCCTATTTTT ATCTTGTTGA GGCTGGTATT TTAACAATTC AGGAATTGAT	1560
AGTGAATGTG TAAAATTTTT TGTTAGAATA AGTTTATAAA AAAGAAAAGG AGTATTTGAT	1620
TATGTTACAA AAAATTATG AGCAGATGGC TAATTTCTAT GATAGTATTG AAGAAGAGTA	1680
TGGTCTTACA TTTGGTGATA ATTTTGACTG GGAACATGTT CATTTTAAAT TTTTAATTTA	1740
TTATTTAGTG AGATATGGCA TTGGTTGTCG TAAGGATTTT ATTGTTTACC ATTATCGTGT	1800
TGCTTATCGT TTGTATCTTG AAAAAATGGT AATGAATCGG GGTTTTATTT CTGTTGAGG	1860
TAATTTTAGT AAATTTCCGA ACTAATTTAC TCTTTTATGG AAAGATGATA GTAAATAGCT	1920
AGTAATTTTT CTAAATCATT TTTTAATAGT TGGAAATAGC AAATCTTTCT ATTGTTTCTT	1980
CTTGATAAAA AGGCGATTTT TTATTATAAT AAATGTAAAG ATATAATTGC AGGTGAGAGT	2040
CCTGCCATGT ATGTGAGAAA GGAAGAGCCT GATGGCTCAG ACAAGATTAT GACTTCAGTT	2100
GTGTTGTAG GTACCCAATG GGGTGATGAA GGTAAAGGGA AGATTACAGA CTTCTTTTCA	2160
GCGAATGCAG AAGTGATTGC ACGTTACCAA GGTGGTGATA ATGCTGGTCA CACGATTGTG	2220
ATTGACGGTA AGAAATTTAA GTTGCACTTG ATTCCATCTG GGATTTTCTT CCCTGAAAAA	2280
ATATCTGTCA TTGGGAATGG TATGGTTGTA AATCCTAAAT CTCTTGTAAG AGAGTTGAGC	2340
TATCTTCATG AGGAAGGTGT AACAACTGAT AACTTGCCTA TTTCTGATCG TGCGCATGTT	2400
ATTTTGCTT ATCATATCGA GTTGGATCGC TTGCAAGAAG AAGCTAAGGG CGACAATAAG	2460
ATTGGTACGA CAATTAAGGG AATTGGTCCA GCTTATATGG ACAAGGCTGC TCGTGTGGA	2520
ATTCGTATTG CAGATCTTTT AGATAAAGAT ATTTTCCGTG AGCGTTTAGA ACGTAACCTT	2580
GCTGAAAAGA ATCGTCTTTT TGAAAAATTG TATGACAGTA AAGCGATTGT TTTCGATGAT	2640

1321

ATTTTGAAG AATATTACGA ATATGGTCAA CAAATCAAGA AATACGTGAT AGATACATCT 2700
 GTTATCTTGA ATGATGCGCT TGATAATGGC AAACGTGTGC TTTTGAAGG TGCACAAGGT 2760
 GTTATGCTAG ATATCGACCA AGGTACTTAT CCATTTGTTA CGTCATCAAA CCCTGTAGCT 2820
 GGTGGTGTGA CAATTGGTTC TGGTGTGCGT CCAAGCAAGA TTGACAAGGT TGTAGGTGA 2880
 TGTAAGCTT ATACGAGTCG TGTAGGAGAT GGTCTTTCC CAACTGAGTT GTTTGATGAA 2940
 GTGGGAGAAC GTATCCGTGA AGTGGGTCAT GAATATGGTA CAACAACCTGG TCGTCCACGT 3000
 CGTGTAGGTT GGTTCGACTC AGTTGTGATG CGTCATAGCC GTCGTGTTTC TGGTATTACT 3060
 AACCTTTCTT TGAACCTCTAT TGATGTTTTG AGCGGTTTGG ATACTGTGAA AATCTGTGTG 3120
 GCCTATGATC TTGACGGTCA ACGTATTGAC TACTATCCAG CTAGTCTTGA ACAATTGAAA 3180
 CGTTGCAAGC CTATCTATGA AGAGTTGCCA GGTGGTCAG AAGATATTAC CGGAGTTCGC 3240
 AATTTGGAAG ATCTTCCTGA GAATGCGCGT AACTATGTTT GTCGTGTGAG TGAATTGGTT 3300
 GCGGTTTCGA TTTCTACTTT CTCAGTAGGT CCTGGTCGTG AACAAACAAA TATTTTAGAA 3360
 AGTGTGTTGGT CCTAAGAGAT TTTTAAGATT TGTTTAAGAT AGGTCGGGTA TACTATAGAC 3420
 GGTTACAAGA AGACCTCCTA ACTTGTGTA ACAAATATCC TAAACTTTTC TTTTTCATAA 3480
 TAATCTCCCT ATAGAGTCAC CGCATTCCGT GGCTTTTTTT GTGTTGGGAT TCATGATATA 3540
 ATAATAAAAT CGATAAGTAG GAAAAGAGAA AAGAGATGTA TTATACGCTT GAAGAAAAAG 3600
 AAGTCTTTAT GAGGGAGGCT TTGAGAGAGG CTGAGATTGC TCTTGAACAC GATGAAATTC 3660
 CAATTGGTTG TGTGATTGTC AAAGATGGGG AAATCATTTG TCGTGGGCAT AATGCGCGTG 3720
 AGGAATTACA GCGAGCGGTT ATGCATGCGG AAATTATGGC TATAGAGGAT GCGAACTTGA 3780
 GTGAGGAGAG TCGCCTTGCT GGATTGCACA CTTTTGTGA CCATTGAACC G 3831

(2) INFORMATION FOR SEQ ID NO: 292:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1441 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 292:

CCGCTGTTC AACGCAACA TACCATAGTC CGTACGGGAT TCGAACCCGT GTTACCGCCG 60
 TGAAAAGGCG GATGACTTAA CCCCTTGACC AACGGACCTG AGTTGTTATT TTCAACTCTT 120
 ACTATTATAC AGTCTTTTCA AACTTTGTCA ACTACTTTTT CTAATTTTTG TTTATTTTTT 180

1322

CAACTTATAG TAAAAAAGC CAGAATTATA CTGACTCTTC TATCGCTCAT TAACTTAGA	240
AGCACGTTCT TTTCCCCACC AATAAGGGAT TAGTTCTGCG ACTTTAACTG TTTTCTTAT	300
ATTATAGTCC ATCATGAATT CTGCATCTTT ATTTTCAGCA TTAAGCTCTA AAAGGAATTC	360
TCTACAAGCA CCGCAAGGCA TGGCTGAACT TCCACCATAA GGTGGTTTGT CTCGAAAGGC	420
TAATACTTTC TTAACCTTAG TTTGTCCTGA AAATTGGTAC ATATTGAAGA GGGCCGCCCC	480
TTCTGCGCAG AGATGGAAAA CACCACAGGT TCCCTCCATA CAGAATCCTG TAAATATTTG	540
TCCATCTCCT GCTTCTACTG CAGCTACAAC ATGATTGGCA TAAACAAAGT CTGATACTTC	600
ATGTGGATTG TATAGTTTCT GTGCTTCTTC GTACATCTTT TCCCAGATGT CCATTATTGT	660
ATCCTCTTTA TTTAGAGATT TCTTTTAGCA TGTTTTCGAT ATGCTGAATT GATTTTTCAC	720
GTCCAAGCAA GAAAATTGTA TCTGGTAATT CTGGCCCATG CATTTCGCCT GAACTGCGA	780
TACGAATAGG CATGAAAAGA TTTTCCCTT TAATACCTGT TTCTTTTGG ACTGCTTTAA	840
TTTGTGGGAA GATATTTTCT GTCACAAATT CATCATCTGT CATCGCTTCA AGTTTGTCTT	900
TGAATGCTTC AAGAACTGTT GGAACGTGTT CACCCGTCAT GACTTCGCGC TCTGCTTCTG	960
TCAATTCTGG GAAATCTGAG AAGAAAAGAT CTGTCAATGG GATAATCTCA TCTACTGATT	1020
TCATTTGTGG TTTATAGAGC TCAACTAATT TTTCAGCCTT GTCAGTCAA CGGCCTGCTT	1080
CCTCTAAGAA TGGTTTTGCC ATTTCAAAGA TGGTTTCAAG GTCTGCATTC TTGATATAAT	1140
CATTGCTCAT CCAGTCTAGT TTTTCTGAT CAAAGGCTGC TGGTGACTTG CTGAGGCGGT	1200
TTTCATCAA AAGTTTAATG AATTCTTCAC GAGAGAAAAT CTCATCCCCA CCACCTGGGT	1260
TCCAACCAAG AAGAGCAATA AAGTTAAAGA CTGCTTCTGG AAGGTAACCT TTCTTTCGGT	1320
AATCTTCGAT AAATTGAAGT GTATTAGTAT CACGTTTAGA TAACTTCTTA CCAGTTTCAG	1380
AGTTGATAAT CAAGTGTCTG GTGACCGAAC TCTGGAGCTT CCTCAACCTA AGAGCGGGTA	1440
T	1441

(2) INFORMATION FOR SEQ ID NO: 293:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 4398 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 293:

CGGCTTATGT AGTGGCAATC TTTCTACGTA AGCGAAACGA GGGGAGATTA GAGGCGCTAG	60
AAGAAAAAAA AGAAGAACTA TACAATCTTC CAGTAAATGA TGAAGTAGAA GCTGTAAAAA	120

1323

ATATGCACTT GATTGGACAA AGTCAAGTGG CTTTCCGTGA ATGGAATCAA AAATGGGTCG	180
ATTTATCTCT CAACTCTTTT GCCGATATTG AAAATAATCT CTTTGAAGCA GAAGGCTATA	240
ACCATTTCATT TCGTTTCTC AAGGCCAGTC ATCAAATTGA CCAAATTGAG AGTCAAATTA	300
CTTTGATTGA AGAAGATATT GCGGCAATTC GCAATGCTTT GGCAGACTTA GAGAAGCAAG	360
AATCTAAAAA TAGTGGTCGT GTTCTTCATG CTTTGGATTT ATTTGAGGAA CTTCAGCATA	420
GAGTTGCTGA AAATTCAGAA CAGTATGGTC AAGCCTTGGA TGAAATTGAA AAACAATTAG	480
AAAATATCCA ATCTGAATTT TCACAATTTG TAACCTTGAA TTCATCGGGT GACCCGTGTG	540
AAGCCGCAGT GATTTTGGAT AATACAGAAA ATCACATTTT GGCCCTTAAGT CATATTGTGG	600
ATCGTGTTC AGCCTTGGTT ACGACGCTTT CTACAGAATT GCCAGATCAA TTACAGGATT	660
TGGAAGCCGG TTATCGTAAA CTAATTGATG CTAATTATCA TTTTGTGTA ACGGATATTG	720
AAGCGCGTTT CCACTTGCTT TATGAAGCAT TCAAGAAAA CCAAGAGAAT ATTCGTCAGT	780
TGGAATTGGA TAATGCCGAA TATGAGAATG GACAGGCACA AGAGGAAATC AATGCCTTGT	840
ATGATATTTT TACTCGAGAA ATTGCTGCTC AGAAAGTAGT GGAAAATCTA CTGCAACTC	900
TTCCAACCTA TCTTCAACAT ATGAAAGAGA ATAATACTTT ATTGGGAGAA GATATTGCAC	960
GTGTGAACAA GACCTATTTA CTTCTGAGA CAGCTGCAAG CCATGTTCTG CGTATTCAGA	1020
CAGAATTAGA GAGTTTGTAG GCAGCTATTG TTGAGGTAAC TTCAAATCAA GAAGAACCAA	1080
CCCAAGCTTA TTCAGTTCTT GAAGAAAATC TTGAGGATTT ACAAACTCAA CTAAAAGATA	1140
TTGAAGATGA GCAAATTTCA GTTAGTGAGC GCCTGACACA AATTGAGAAA GATGATATTA	1200
ATGCACGTCA AAAGGCCAAT GTTTATGTCA ATCGTCTCCA TACTATCAAG CGATACATGG	1260
AAAAACGCAA TCTGCCAGGT ATTCCACAAA CTTTCTTGAA GTTATTCTTT ACGGCAAGCA	1320
ATAATACCGA GGATTTAATG GTTGAGTTAG AACAAAAAT GATTAACATT GAATCTGTTA	1380
CCCGAGTTCT TGAAATTGCA ACGAATGATA TGGAAGCTTT AGAAACGGAA ACTTATAATA	1440
TTGTACAATA TGCAACTTTG ACAGAGCAAC TCTTGCAATA TTCTAACCGC TATCGCTCAT	1500
TTGATGAACG CATTCAAGAA GCATTTAAGC AaGCTTTAGA TATTTTGTAA AAAGAATTTG	1560
ATTATCACGC TTCATTTGAC AAGATTTCTC AAGCATTGGA AGTGGCAGAG CCTGGTGTA	1620
CCAATCGCTT TGTTACCTCA TATGAGAAAA CACGTGAAAC GATTCGTTTT TAATAAAAGA	1680
AAAAGATTTT ATTGTGTGAG GAGCAGAATC AAATCTTTTT CTATAGTTGT GGGGAGATTT	1740
ACTTCATTTT CTCCTGAGAT TGAGTTTTTG CCCAGCCGAT TTATCCACTA CCTCAAAACA	1800
GTGTTTTATA CTCTCGAAA ATCTTTTCAA ATCACGTCAG CGTCGCCTTA CCGTACTCAA	1860

1324						
GTACAGCCTG	AGGCTAGCTT	CTTAGTTTGC	TTTTTGATTT	TCATTTAGTA	TTAAAGTGAT	1920
TTCGCCAGTC	TTATCTGCAG	CTTCAAATCT	GTACTTTGAG	TAAC TTGGTA	ACCGTCCAAT	1980
AACGAAGTCT	ATTGAAAAAT	CTCCAGACTA	GAGAACTCAC	GGATAGTTCC	TAATCTGGAG	2040
ATTTCTTATT	TGCAC TTTT	TTGTACA ACT	TTAGTCCACG	GTAAATAGAC	CTCTAAAACC	2100
TCTTTGTTTA	CGAGAGTTTC	CTCGTTTGGA	AGACATTCTA	GAAGATAGGA	TAGATATTTC	2160
TCGCTATTTA	TACTAGACTA	AAATCAAAAA	GCATTATATA	ATAGTGATAT	GAAATCAACT	2220
AAAGAAGAAA	TCCAAACCAT	CAAAACACTT	TTAAAGACT	CTCGTACAGC	TAAATATCAT	2280
AAACGCCTTC	AAATCGTTCT	ATAGTAAAAT	GAAATAAGAA	CAGTACAAAT	CGATCAGGAC	2340
AGTCAAATTG	ATTTCTAACA	ATGTTT TAGA	AGTAGAGGTG	TACTATTCTA	GTTTCAATCT	2400
ATTATATTTC	GTCTGATGGG	CAAATCTTAT	AAAGAGATTA	TAGAACTTTT	ATAGTAGATT	2460
GAAATAAGAT	GTGAACAACT	CTATCAGGAA	AGTCAAATTA	ATTTATAGAA	ATATTTTAGC	2520
AGCCAAGGTG	TACTGTTATA	GATTCAATAC	ACTATAGACT	GTAATCAAAC	AACGATTTGG	2580
CGAAATGTAA	AAAAATATGA	GGAGTTCGGA	CTCGACTCTC	TCCTTCAAGA	AACACGTGGT	2640
GGTCGTAACC	ATGCATATAT	GACAGTTGAG	GAAAAGAAAG	TCTTTCTTGC	CCGCCATTG	2700
AAGGCTGCAG	AGGCAGGAGA	ATTTGTTACA	ATTGATGCCT	TATTTCAGGC	TTATAAAAAG	2760
GAGTTAGGTC	GTTCTTACAC	ACGTGATGCC	TTCTATCAAC	TGTTGAAGTG	CCATGGTTGG	2820
CGAAATATTA	TGCCACGTCC	AGAACATCCT	AAGAAAGCAG	ACGCTCAAAC	CATTGTGCGG	2880
TCTAAAAATA	AAATCTCAAT	TCAAGAAGAA	AAGAAAGCGC	TTTAAAACCA	GTAGACGTTT	2940
TCGTAAGGTT	CGCTTGATGT	ACCAAGATGA	GGCTGGTTTC	GGTAGAATCA	GTAAACTGGG	3000
ATCTTGTTGG	GCTCCAATAG	GAGTAGGTCC	ACATATCCAT	AGTCACTATA	TACGAGAATT	3060
TCGCTATTGT	TATGGAGCTG	TTGATGCCCA	TACAGGCGAA	TCATTTTCT	TAATAGCTGG	3120
TAGATGTAAT	ACTGAGTGGA	TGAACGCCTT	TTTAGAAGAG	CTTTCACAAG	CTTATCCAGA	3180
TGATTATCTT	TTACTCGTTA	TGGACAATGC	TATATGGCAT	AAATCAAGTA	CCTTAAAGAT	3240
TCCGACTAAT	ATTGGTTTTA	CCTTTATTCC	TCCATACACA	CCAGAGATGA	ACCCCATGGA	3300
ACAAGTGTGG	AAAGAGATT	GTAAACGTGG	ATTTAAGAAT	AAAGCCTTTC	AAACTTTGGA	3360
AGATGTCAAT	AATCAACTCC	AAGATGTTAT	ACAAGGATTG	GAGAAGGAGG	TGATAAAGTC	3420
CATCGTTAAT	CGGAGATGGA	CTAGAATGCT	TTTTGAAAAC	AGATGAGTAT	AAAAAGAAAG	3480
TCCTCATTTT	AATAGAAATC	ACGACTTTCT	GATGGATTTA	TAGTAAAATG	AAATAAGAAC	3540
AGGACAAATC	GATCAGGACA	GTCAAATCGA	TTTCTAACAA	TGTTTTAGAA	GCAGAGGTGT	3600
ACTATTCTAG	TTTCAATCTA	CTATATTTTT	GGAGTGATAG	AAAAGCCCTT	CATAAGCTAG	3660

1325

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TCTACTTGTT CAGGTGCGAG AGCTTTGACA TCTTTTCTG TACTTAGCCA AGTCAGTTTT 3720
CCGTTCTCAA AGCGTTTATA TAGTAGCCAA AATCCTTGAC CATCCCAGTA AAGGGCTTTA 3780
AAGCGGTCTT TACGTCCACC ACAAAGAGA AAGACTTGAC CGGAGAAAGA ATCCAATTCA 3840
AAGTGGGTTT TAACTACATA GGCTAATGAG TCTATTCCCT GCCTCATATC TGTCTTGCCA 3900
CAAACAAGGT GAACTTGACC TAAATCACTT AGTTGAATTA TCATAGTACA ATACCTTTCC 3960
TCCGATAATT ATTTTATATC TAGTATACTG GAAGTTGGGG AATTAGGATA GATACCTTGT 4020
TATGACGCGC TTACGTAACT TGTAAC TAGC TGCCTAGTTT GATCTTTGCT TCTTCATTGA 4080
TTAGCAGTAG ATTTCAAAAT GATAAAAACG CATAGTATCA GGTATTGAAA TGTACTGCCC 4140
CAAAGTTAG ACAGAAAAA TCTAACTTTT GGGGTGTTTT TGTATGAAA TTAAGTTATG 4200
ATGATAAAGT TCAGATCTAT GAACTTAGAA AACAAAGATA TAGCTTAGAG AAGCTTTCAA 4260
ATAAATTGGG GATAAATAAT TCTAATCTTA GGTATATGAT TAAATTGATT GATCGTTACG 4320
GAATAGAGTT CGTCAAAAAA GGAAAAATC GTTACTATTT TCCTGATTTA AAACAAGAAA 4380
TGATTAATAA AGTCTTAC 4398

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(2) INFORMATION FOR SEQ ID NO: 294:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 718 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 294:

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AGATTTT TAG ACTTGTCTT TAATCGTTT TTTTAGGGA TGATTGCGAC ACCTTCTTTT 60
GGCTATT AAC TTTAGCAGGA GGGATTATCC TTGGTCTAGC GCCGGCTAGT GCCACCTTGA 120
TGAGCTT ATA TGCAGAACAT GGTATAGCT TTCGGGAATA CAGTTTGAAG GAGGCTTGGT 180
CTCTTTA CAA GCAAAATTTT GTCTCAAGCA ACCTGATTTT CTATAGCTTT TTAGGTGTGG 240
GTCTAGT TTT GACCTATGGT TTGTATCTCT TGGTGCAATT GCCTCATCAG ACCATTGTTT 300
ATTGATT GC GACCCTTTTG AATGTCCTAG TAGTTGCCCT GATCTTTTGT GCTTATACAG 360
TATCTTT AAA ATTACAAGTT TATTTTGCCT TGTCTATCG AAATAGTCTC AAATTATCCT 420
TGATTGG CAT CTTTATGAGT CTAGCAGCTG TGGCTAAGGT TCTCCTTGGG ACTGTGCTAC 480
TTGTAGC AAT TGGTTATTAT ATGCCTGCCC TGCTATTTT TGTAGGAATT GGGATGTGGC 540
ATTTCTT TAT CAGTGATATG TTGGAACCTG TCTATGAAAT CATCCATGAA AAATTGGCGT 600

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1326

CAAAATAGAA TGAAGCAGTT TTGGCTACAT ACGCTTCTAA GAACCTATAG TTCAGTGATG	660
ATCATTATCA TTGCGAGTTT TGCAATCTTA CTCTCTTACG CTGTCTGGGA TTCACGTG	718

(2) INFORMATION FOR SEQ ID NO: 295:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 718 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 295:

TCGGTACCAA AATTCTGGAT TTATACTAGC AAAGATCCAA GAGCAAATTA TTAAACAGAT	60
TTAGGTCTAG TTTTCCCTGA ATCATTAAAA GAATTGAGA GTGAAGATAG TTTTGCAAAG	120
GAAATTTCTG CAGAAGAAGC AAATAAGATA AATGATGCTG ATGTAATCAT AACTTATGGT	180
GATGATAAAA CTCTTGAAGC TTTACAAAAA GATCCTCTTT TAGGTAAAAAT AAATGCAATT	240
AAAAATGGTG CCGTTGCTGT AATTCCAGAT AATACACCGT TAGCAGCCTC ATGCACTCCA	300
ACACCACTTT CAATAAACTA TACTATTGAA GAATACCTAA ATCTTTTAGG AAATGCATGC	360
AAAAATGCGA AATAAAAAAC AAATAAACCT AGGCATAATT TTTATAATCT GCCTAGGTCT	420
TCTTATTACA ATATTTTGT CATTAAGCT TGGAACAAAA GAAATTAATA TCAGAGATTT	480
TTTAGCAGCT TTTGGAATGG GTAATACAAA TGATGATTTT ATTAAATCAA TTATATATAA	540
TAGAATACCT AGAACTATTT TTGCAATTTT AGCAGGTTCT AGTCTTGCCA TAAGCGGTGT	600
ATTGATGCAA TCAGTTACTA GAAACCCAAT AGCTGATCCA GGTATACTCG GTATAACAC	660
AGGAGCAAGT CTTAGTGTAG TAATTGGTCC TTCTTTTAG GGAATTCATC AAGCATAA	718

(2) INFORMATION FOR SEQ ID NO: 296:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1436 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 296:

GAACTAATCA TTTTACAGG ATGAGATTTA CAGCAGAGAG TTTGAAGGCT TTATCAAAGG	60
TTTTTCTTGG CATAATGACT TTTCCTCGTT TCCACTTAAT TTTGTGTCTA CTTTATTATA	120
CCAAGTCCAC SCTTAAGTTA GATAATAAAT CTAACCTAAG GAAGCTAGAA GGATGAGAAT	180
CCAGTGCGTC AAGAGTCCCA AACTTAAGCT GATGGGGACA CCCAGAATAA TTTGCTTTTT	240

1327

GAAGGCAAGG CCACGTTCTT CTATATTGGG AAGTGAGAGT TGAATGAGAG AACCAGCTGA	300
TGAAAAGGGT GAGATATTAG TAGATAGAGC GCCAATAACG GTGGCTGTTG TGAGTAAGTG	360
AATATCAATC TGAGGATTTT GAGCACTGAT GATAGCAATG ATGGGAAAGA GGGCTGGAGC	420
TACAACGGAT AGGGTGAAC TAAAGAGTGA CATCACTCCG GCTATCACAC AAAAGAACAG	480
AGGTAACCAG AAATGAGGAA TGGTTGTTGT CATGAGGTGC CCTATCAGTG TGAATAAACC	540
TGACTTGACC GCTAGAGACA TTAGTAAGCT CATGCCGAG AGCATGATAA TTGTAGCCCA	600
GGGAACCTTA GCTAAAATGG CTTCTTGCTT CCCTAATTG AGCCTTAAGG CGAGGCAGAC	660
CATGAGTATT GAGACAAAGC CAATATCAAA TGTTTTTTGA TAAGTAGCTA TCCAGGCGAT	720
GTTTGGGAAA ATGAGATGCA ACAAGGGAAA AAGCCAAACC AAAACCATGC TGCTGATCAT	780
GAGCAAGGTG GTTGTCTTT GAACCTTGCT GAGGAGTGGT GGTGCGTCAA TAGTCAAGGA	840
TGAGTTTGT CTTCCCTTAC TATAGTGACT GTAACAGGAT AATAAAAGCA AGACGATGAG	900
TGGGTAGATA ATGCTGACGA TAAAGATATG ATTGCCAAGT GAAAAAGCTT GCTCTTCCCA	960
TCCCATTGTC TTAACAGGC CTTGAAAGAC AATGCCTGAG CTAAGGTTA TCAAATTAGC	1020
CCCTCCTGAA GCTCCCAAT TGACGGCTTG AGCTCCAATC AAAGGGTGT TGTCCGCTTT	1080
TTGACAGAGG GTAATCGCTA GAGGACAGCA AACGGCCATA GTAGTAAAA ATCCAGCACC	1140
TAAAGCAGAC AAAAGGGTTG CCATCAGGTA TAAATCATG TAGAGGGCGT TAGGGTGGGT	1200
GCGTGTGCGG TAGAGAATGT GTTGAGCCAA AACATCAAGA GTACCGTTAG TTGTTGCAAC	1260
GTTATAAAG AGAGAGACGC TAAAAATGGT AAAAAAGAGT GAGGTTGGCC AAAAATGAAG	1320
AAGTCTTTG GGGCTTAATC CCATGAGAGT GGTGCGATG AGGTAAGAAA AAGCAATAGC	1380
CAGCAGGCCA ATATTGATTT TGGTGCGGTA ACCAATTCCA ATGGCTAGAG CAATGG	1436

(2) INFORMATION FOR SEQ ID NO: 297:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1696 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 297:

CCATTTGGGA AAGAACGTAA GAGTTTGCAG GGTGAGATTC CAGAAGAATT TTCAATGTCA	60
GGCGTTGACA TGTCTATGAT TGACCACATT CCAGATATGA TTGAAAATGG TGTGGACAGT	120
CTAAAAATCG AAGGACGTAT GAAGTCTATT CACTACGTAT CAACAGTAAC CAACTGCTAC	180

1328

AAGCGGGCTG TGGATGCCTA TCTTGAAAGT CCTGAAAAGT TTGAAGCTAT CAAACAAGAC	240
TTGGTGGACG AGATGTGGAA GGTGCCCCAA CGTGAAGTGG CTACAGGATT TTAATATGGT	300
ACACCATCTG AAAATGAGCA GTTGTGTTGGT GCTCGCCGTA AAATTCCTGA GTACAAGTTT	360
GTCGCTGAAG TGGTTTCTTA TGATGATGCG GCACAAACAG CAACAATTCG TCAACGAAAT	420
GTCATTAACG AAGGGGACCA AGTTGAGTTT TATGGTCCAG GTTTCCTGCA TTTTGAAACC	480
TATATTGAAG ATTTGCATGA TGCCAAAGGC AATAAAATCG ACCGCGCTCC AAATCCAATG	540
GAACATATGA CTATTAAGGT GCCTCAACCC GTTCAATCAG GAGATATGGT TCGTGCATTA	600
AAAGAAGGAC TCATCAATCT TTATAAGGAA GATGGAACCA GCGTCACAGT TCGAGCTTAA	660
GAAAGGAAAA GGAAATGATA GAGGCACAGG GTTTCCTTAGT GGATAAGCAA ACAAGATGCA	720
TTCATTACCA TAGCAAGCTG GATATTATTG CTTTACAATG CTATGATTGT AAAAAGTATT	780
ATGCTTGTTA TCGGTGTCAT GATTTCATTAG AACATCACCC TTTTGAGCCG TATCCCTTAT	840
CTTTGATACA GGATAAGCCT ATTTTATGTG GTGTTGTGCT AAAACTACTA ACATATAAGC	900
AATATAAAGA AAGCTTAAGT TGCCCCCTTT GTTTTCTCG CTTTAATCCA GGTGCCCCAA	960
ATCATAAGGA ACGCTATTTT AAATAGCAAA TCATCTAGTT TTGAAGTAGG AGAAAACCTCA	1020
ATTTCAAGAG AAAATGAAGT AAATCTTCCC ACAATAAAC GCATAATATC AAGATTGTTT	1080
AATACCTGAT ACTATGCGTT TTTAAGATTT TAAAGACTTT TTTCTTTTAT CTGGTATTTT	1140
GACTACTTGT TAAACTGGG TTAATTTTCG ACTGTTAAT AGTTATTATG CAAAGTCTAA	1200
AAGGTTAGAA TTGTCAAAAC AATCCGTCTA GAGTATGCGT GATGCCAACC GTGGTGGATG	1260
TTCTCAGTCA TGCCGTGGGA AGTACGACCT TTACGATATG CCATTTGGGA AAGAACGTAA	1320
GAGTTTGACG GGTGAGATTC CAGAAGAATT TTCAATGTCA GCCGTTGATA TGTCTATGAT	1380
TGACCATATC TCAGATATGA TTGAAAATGG TGTGGACAGT CTAAAAATCG AAGGACGTAT	1440
GGAGTCTATT CACTATGTAT CAACAGTAAC CAACTGCTAC AAGGCGGCTG TGGATGCCTA	1500
TCTTGAAAGT CCTGAAAAGT TTGAAGCTAT CAAACAAGAC TTGGTGGACG AGATGTGGAA	1560
GGTGGCCCCA CGTGAAGTGG CTACAGGATT TTAATATGGT ACACCATCTG AAAATGAGCA	1620
GTGTTTGGT GCTCGTCGTA AAATCCCTGA GTACAAGTTT GTCGCTGAAG TGGTTTCTTA	1680
TGATGATGCG GCGGTA	1696

(2) INFORMATION FOR SEQ ID NO: 298:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1022 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

1329

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 298:

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CCGAGTTTAT TATGGTTTCT TCGGAATTTA TCTCAAAGAT TGAATTGCT TGCAATAAGA      60
AAGAAAGTCT TTATAGTCAA AGCAAATTTA AGTATGCGAT TCGTTTCGATG TTCGCAGGTG      120
CATTTTTTAAC CTTCACTACT GCTGCAGGTG CAGTTGGGGC TGACTTGATT AATAAAATTG      180
CACCAGGTAG TGGACGCTTC CTCTTTCCAT TCGTTTTTGC TTGGGGCTTG GCCTACATTG      240
TTTTTTTGAA TGCCGAGTTG GTCACCTCAA ACATGATGTT CTTGACTGCT GGTAGTTTCT      300
TAAAAAAAT CTCTTGAGA AAAACAGCTG AGATTTTACT ATACTGTACC TTGTTCAACC      360
TTATCGGAGC CTTGATAGCA GGGTGGGGCT TTGCTCATTG GGCAGCCTAT GCGAATCTGA      420
CACACGATAG TTTCATCTCA GGTGTTGTTG AGATGAAGTT AGGCCGCTCA AATGAATTGG      480
TCTTGCTTGA GGCATTTTG GCAAATATTT TTGTAAATAT TCGGATTCTG TCATTTATTT      540
TGGTCAAAGA TGGTGGTGCC AAACCTTGGC TTGTGTTGTC AGCTATTTAC ATGTTTGTAT      600
TCTTAACAAA CGAGCACATT GCGGCGAACT TTGCTTCTTT CGCGATTGTG AAATTCAGTG      660
TTGCTGCCGA TTCAATTGCC AACTTCGGTG TTGAAAATAT GCTTCGCCAC TGGGGTGTGA      720
CTTTCATCGG AAACCTTATC GGAGGAGGCC TCTTGATGGG TCTTCCATAT GCCTTCCTCA      780
ATAAAACGA AGATACTTAT GTAGATTAAG AAAATGAGCA CGATTGAGTC GTGCTTTTTT      840
CATTTTCAAA ATAAGGTAAT AGCTATTTCT TATATCAAAA TATAGAAAAC TGATATTGTG      900
ArACTATAAC TCAAGGTGCT ACAATATCCT TAATAAAATA ATATGGAGGT CACCTTATGA      960
CTTGATGATT TAAATnTGAA ACTCTACAAC TACATGCTGG TCAAGTTGTG GCTCCAGCTA     1020
CT                                                                           1022

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(2) INFORMATION FOR SEQ ID NO: 299:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 663 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 299:

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CCTTAAGTAA TCTCTGATAA TATTTTCTTT ATTAGCATAG GGAATATCG ATATAATGGC      60
TTCATTATGA GTGGCAGGAA TATCCAATAT GGCAACTTTT CCAATAGATA ATTTAAACT      120
CATTAATAAA GTTCCTTTAG GTGAAATGTC TATTTTCTTT GATTTTAATG CTAATTTAGA      180

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1330

AATAGATTCT CTCGCATTAG TTACATAACC AGATATAGGC ATATCTGATA TAGATACCCA	240
AGGTATTTCA GTTCCCCAAA AAGTAGCTTC ACTGCGTGGA GGAGTTTTTC CTATTCTGAA	300
GTTAACTAGG CTAGCAAATT TAATATATCT CCATGCTTCT GGGATTTTCAT ATATAGGATA	360
AGAGGTGTGT TCGTCTTTGT TCCCATAATA AGAGTTATCA TCTCCTGGG AAACAATAGA	420
AATGTCCAAA TCTTTCTTTT TAATCTTGCC TTCTTCAAAG AGTTTTGT TTTCTGCTCG	480
TATTTTTCAGT AGTAAACTT CGACTGATTC ATCATTTGGG TCTTGTCAA CTAATTTTCC	540
TTGCATAGCA TATTGAAGAA TAGATTTTTT TAGTTTATCT GGAAATCTT TATCTAGCTG	600
TTCTAGTCTA TTATAACTTT CAGCATATTC ATCTACTTTT TCTAAAGCTG ATTCGATTGC	660
TTC	663

(2) INFORMATION FOR SEQ ID NO: 300:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 881 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 300:

CGTCGCTGAA CATGTCAACA GCAAATTAAC CTAAACAAAC TAAAATTATG TGATACTTCA	60
CATAATTTTC TTTAGAAAAT ATTATCAGAA GAAAGTTGAG AAAAATGGCA GAAAAACAT	120
ATCCTATGAC CCTTGAGGAA AAGGAAAAAC TTGAAAAAGA ATTAGAAGAA TTGAAATTGG	180
TTCTGTCGACC AGAAGTGGTA GAACGCATTA AGATTGCCCG TTCATACGGT GACCTTTCAG	240
AAAACAGTGA GTACGAAGCA GCTAAGGATG AACAAGCCTT TGTCGAAGGA CAAATCTCTA	300
GCTTAGAAAC AAAAATCCGC TATGCTGAAA TCGTCAATAG CGACGCAGTT GCCCAGGACG	360
AAGTAGCGAT TGGTAAAACA GTCACCATCC AAGAAATTGG TGAGGACGAA GAAGAAGTTT	420
ATATTATCGT AGGTTTCTGCT GGTGCAGATG CCTTTGTAGG TAAGGTTTCA AATGAAAGCC	480
CAATTGGGCA GGCCTTGATT GGCAAGAAAA CAGGTGATAC AGCAACCATT GAAACGCCTG	540
TTGGTAGCTA TGATGTAAAA ATCTTGAAGG TTGAAAAAAC AGCCTAAAAA CAGAAAAAGG	600
ACTGGGGAGG CGATGTGCTT CACTCACTCC TTTTCCATT TTGCTACTCT TCGAAAATCT	660
CTTCAAACCA CGTCAGCGTC GCCTTGCCGT ATGTATGGTT ACTGACTTTG TCAGTTTCAT	720
CTACAACCTC AAAACAGTGT TTTGAGCTAA CTTGTCAGT TTCATCTACA ACCTCAAAC	780
TATGTTTGA GCTGACTTCG TCAGTTTCAT CTACAACCTC AAAACCATGT TTTGAGCCGA	840
CTTCGTCAGT TTCATCTACA ACCTCAAAC TATGTTTGA G	881

1331

(2) INFORMATION FOR SEQ ID NO: 301:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 949 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 301:

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CCTTTTAA TACAAGTTAT TTTGATTAA CCGGCTTGTC TTGAGCTGTC TGCAAAGCTG      60
TGGCAATCGT ATCTGCATAC AATTTTGCTC CTGCTTCGAT AGTGCTACTC TCACTCCCGA      120
AATGAACCTG GTCTGTTCCA GCCCAAATTT CTGGATGCTC TTTCGCAACT TGATTCCAAT      180
CTGCTATCGT AATGTAAGGT GTCTTCTCTG CCAATTCTCT CATATAGGCA GCAGCCTTCT      240
CAACGATGGC ATAGGTCTCT TTTGTCTTAT CTCCCTCATA AGGAGTCACC AAAATCATAT      300
GGTGTCCCTT AGGAAGATTT TTCACGATAC TGTCCAGTC ATCCTTGTA TTTCTCAGGAT      360
TATTTACCCC AGTCGCAATG ACCACCGTCT TAGGTAAAAA TTTATTCTGG CTATTATTTA      420
GCATGATTTT ATTTGCGGTC TTGGTTGTTA CGCTGACCTG CGCGTTAATC TGTGCTCCAG      480
GAAGAGCTGT CTGTAGTGCT GTATTTGCCC TTAAAGCCAC TGAGTCACCA ATTAACATAG      540
TGCCATCAGC AATTCCCAA CTGTTTGCTG CTGCCCGTTC TGCCATCACC TTGGTCTGGC      600
CAATATTTGT TGCAGCTTGC TTCAAGCCAT TGACAGTCAA GTCTGTCTCA AACGCTCCCA      660
CTTGTGGTGC CAACAAGGTC ACCGTGCAGA CAATGATGGT CAAGATTCCT GTACCTGCTG      720
CAAGAATTGC GTGAATATAA GGCAGGGGAC GAAsGGTTTG GACAATAGGT GTGTTCTTGC      780
CTGCAATCCA AGGTTCCAAT ACATAAAATG ACAGACTGGC AAAGCCATAA GAACAAATCA      840
GAGTCAGTAA TACAGCAAGA AGATTTGATG TCAACTGTGA GAAAATGATA TAGAAAGGCC      900
AATGGAAGAA ATAAACCGCA TAGCTAGTAT CCGCTAAAAA GCTGATAAT      949

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(2) INFORMATION FOR SEQ ID NO: 302:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 622 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 302:

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AAGATATATT TTTTACACAG AAGTATGCAA AAGTAAAGAG TGCAAAAAAT GGAATTAAAG      60

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1332

CGAAAATAAA AGCCGTGTAC AGGCGACCAA ACCAACGTAC ACGGCTAAGG AAAAATAACA	120
AAACTCAAGC AAAGGCAAGG CGCGTGGTTT TGTTAGGTAT TTAGCAAGGG GACAAACCCC	180
TTTGTAATA ATCTCCTCTT ATTTTATCAA AATTAGAGGA AAATGACAAC TTAATTTATA	240
AAAAGGAAAA ATGGAGGATA TAAATGGAAA TTCTGTCTAA AGAAATACAG TTACAGGGCT	300
TACAACCTCT TAAACAGACT CTTGAACTT TAGTTGAGCT AGAAAAACAA CGATCTAGTA	360
AGTTAGATTT AATTCTCGT AAAGAATTAA TGGATCTGCT AGGTATAAGT GCTACAACCC	420
TTGATAACTG GGAGGATCTT GGTCTTAAAC GATATCAGAC TCCGATGGAT GGAGCTAAGA	480
AAGTATTCTA TCGTCCGTCA GATGTGTATT TATTTTTCAGC AATAAAATAG GAGTTATGAA	540
ATGAAAATTG TTACTTTCAA ACCAACTAAA CAAATAGACG ATGGGTTTTC ACTGCCAGGT	600
ATTGACATTC TATTGTCTC AG	622

(2) INFORMATION FOR SEQ ID NO: 303:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1929 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 303:

CGCTAACTTG CAAACAAAAG AAGAACGCAA ACTCCACAAA TCCTTTACGC AGAAACTCAA	60
TCTCATCTAC TTACCTTGCT GACTTGGTAG AGTATGTTGC AGACAAAGAC TTCTCAGTAA	120
ACGTAATTTT TAAATCAGGT ACAACAACTG AACCAGCGAT TGCTTTCCGT GTCTTTAAAG	180
AACTCTTGGT TAAGAAATAC GGTCAAGAAG AAGCTAACAA ACGTATCTAT GCAACAACCTG	240
ACCGCCAAAA GGGTGCTGTT AAGGTTGAAG CAGACGCTAA CGGTTGGGGA ACATTGTGTG	300
TTCCAGATGA TATCGGTGGA CGCTTCTCAG TATGACAGC CGTTGGTTTG CTTTCAATCG	360
CAGCATCAGG AGCTGACATA AAAGCTCTTA TGGAAGGTGC GAATGCAGCT CGCAAAGACT	420
ACACTTCAGA CAAAATCTCT GAAAACGAAG CTTACCAATA CGCAGCTGTT CGTAACATCC	480
TTTATCGTAA AGGCTATGCA ACTGAGATCT TGGTAAACTA TGAGCCATCA CTTCAATACT	540
TCTCAGAATG GTGGAAACAA TTGGCTGGTG AATCAGAAGG AAAAGACCAA AAAGGTATCT	600
ACCCAACCTC AGCCAACCTC TCAACTGACT TGCACTCACT TGGTCAATTT ATCCAAGAAG	660
GAACTCGTAT CATGTTTGAA ACAGTTGTCC GTGTTGACAA ACCTCGTAAA AACGTGCTTA	720
TTCTACTTTT GGAAGAAGAC CTTGACGGAC TTGGTTACCT TCAAGGAAAA GACGTTGACT	780
TTGTAAACAA AAAAGCAACT GACGGTGTTT TTCTTGCCCA CACAGATGGT GATGTACCAA	840

1333

ACATGTATGT GACTCTTCCA GAGCAAGACG CTTTCACTCT TGGTTACACT ATCTACTTCT	900
TCGAATTGGC AATTGCCCTT TCAGGTTACT TGAATGCTAT CAACCCATT T GACCAACCAG	960
GTGTTGAAGC TTATAAACGT AACATGTTTG CCCTTCTTGG AAAACCAGGA TTTGAAGAAT	1020
TGAGCAAAGA ACTTAACGCA CGTCTATAAT AGAAGAAAAG AGTGGTTTGC CCACTCTTTT	1080
TACTCTCTTT ATCCATAGAA ATTGGACTCA GCCAAGACTT GTGATATAAT ATAGAAAGCA	1140
AAAAGGCAGA CGCCTAGATA ATAGGAGAAA CTATGTCAAA AGATATCCGC GTACGTTACG	1200
CACCAAGTCC AACAGGACTA CTACACATCG GAAATGCTCG TACAGCATTG TTTAATTACT	1260
TGTATGCGCG CCATCATGGT GGAACATTTC TCATCCGTAT CGAAGATACT GACCGTAAAC	1320
GCCATGTCTGA GGATGGTGAA CGTTCACAAC TTGAAAACCT TCGCTGGTTA GGCATGGATT	1380
GGGATGAAAG TCCAGAATCA CATGAGAATT ATCGCCAGTC TGAGCGTTTG GACTTGTATC	1440
AAAAATATAT TGACCAACTA TTAGCTGAAG GAAAAGCCTA TAAATCTTAC GTTACAGAAG	1500
AAGAGTTGGC AGCTGAACGC GAACGCCAAG AAGTAGCTGG CGAAACACCA CGCTACATCA	1560
ATGAATACCT TGGTATGAGT GAAGAAGAAA AAGCAGCTTA CATCGCAGAA CGTGAAGCAG	1620
CAGGGATCAT CCAACTGTT CGTTTGGCTG TCAATGAGTC AGGTATCTAC AAGTGGCATG	1680
ATATGGTCAA AGGCGATATC GAATTGAAG GTGGCAATAT CGGTGGTGAC TGGGTTATCC	1740
AAAAGAAAGA CGGTTACCCA ACTTACAACT TTGCCGTTGT TATCGATGAC CACGATATGC	1800
AAATCTCTCA TGTATCCGT GGAGATGACC ATATTGCTAA TACACCAAAA CAGCTTATGG	1860
TCTATGAAGC TCTTGGTTGG GAAGCTCCAG AGTTCGGTCA CATGACCTTG ATTATCCACT	1920
CTGAAACTG	1929

(2) INFORMATION FOR SEQ ID NO: 304:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 708 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 304:

AAATTTAAGA AAAAGGAGAC ACATCATGTC TAAAAAGTA TTATTTATCG TCGGATCACT	60
ACGTCAAGGT TCTTTCAACC ACCAAATGGC GCTCGAAGCT GAGAAAGCAC TTGCTGGTAA	120
AGCGGAAGTT AGCTACCTTG ATTATTCAGC CCTTCCTCTC TTCAGCCAAG ATTTGGAAGT	180
TCCAACACAT CCAGCTGTAG CTGCTGCTCG TGAAGCAGTT CTCGTTGCGG ATGCTATCTG	240

1334

GATTTTCTCT CCAGTCTACA ACTTCTCTAT CCCTGGTACA GTGAAAACT TGCTTGACTG	300
GCTATCTCGT GCCCTTGACT TGTCTGATAC ACGTGGCGTT TCTGCCCTTC AAGACAAGTT	360
TGTCACAGTA TCATCTGTAG CCAATGCAGG GCACGATCAA CTTTTCGCTA TCTACAAAGA	420
CCTCTTGCCA TTTATCCGTA CACAAGGCGT TGGTGATTTC ACTGCTGCAC GTGTTAATGA	480
CTCTGCCTGG GCAsACGGAA AATTGGTTCT TGAAGAAACA GTCCTAAACT CACTTGAAAA	540
ACAAGCTCAA GACTTGGTCG AAGCTATCAA GTAAC TAACA CTCAATAAAA ATCAAAAAGC	600
AAACTAkGAA GCTArCCGCA AGCTACTCaA gCACTGCTTT GAGGTTGTAG ATAGAACTGA	660
CGAGTGThnA ACATATATAC GGTAAGGCGA CACTGACGTG GCTTGAAn	708

(2) INFORMATION FOR SEQ ID NO: 305:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 781 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 305:

CTTCTTTTCT TGGAAATAGG TGTATAATAC GTTATTAAA TTTTGGAGGA GTTGTCTATG	60
AAGAAAAGTT TTATCCATCA ACAAGAAGAA ATTTCCCTTG TCAAAAACAC TTTTACCCAG	120
TATTTGAAAG ATAAGCTAGA AGTTGTCGAA GTTCAAGGTC CTATCTTGAG TAAGGTCGGT	180
GACGGAATGC AGGACAACCT GTCTGGTGTG GAAAATCCAG TATCGGTCAA GGTTCCTCAA	240
ATCCCTGATG CTACTTATGA AGTGGTGAC TCACTTGCTA AATGGAAACG CCACACCTTG	300
GCTCGTTTTG GCTTTGGTGA AGGAGAGGGT CTCTTTGTCC ACATGAAAGC CCTTCGTCCA	360
GATGAGGATT CCTTGGATGC AACCACTCT GTTTATGTTG ACCAGTGGA CTGGGAGAAG	420
GTTATCCCAA ATGGTAAGCG TAACATCGTT TATCTAAAAG AAACAGTTGA GAAGATTTAT	480
AAGGCTATTC GCCTGACTGA GCTAGCTGTT GAAGCCCGCT ATGACATCGA GTCTATCTTG	540
CCAAAACAAA TTACCTTTAT CCATACAGAA GAATTGGTAG AACGCTACCC AGACTTGACA	600
CCGAAAGAAC GTGAAAATGC GATTTGTAAA GAATTTGGAG CCGTCTTTTT GATTGGTATC	660
GGTGCGGAGT TGCCAGATGG TAAACCGCAC GATGGACGTG CACCAGACTA TGATGACTGG	720
ACAAGCGAGT CTGAGAATGG CTACAAGGCT CTAAATGGTG ATATTCTTGT CTGGAATGAG	780
T	781

(2) INFORMATION FOR SEQ ID NO: 306:

- (i) SEQUENCE CHARACTERISTICS:

1335

- (A) LENGTH: 846 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 306:

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CCCCGCATCTT GTAGGGTTT AACGGGCACG ATTTTCATAT CCGTCTTGAT TGTTTTAGCC      60
GCTTCTAGGG CTGTTTGGTA GTTGTTTTTC GCGTCCGGAT GCGCCTTTTG TTCTTCTTCG      120
CTAACAGGGT TATCAGGAGC AAAGAAAATA GCAGCACCTG CCCTAGCCGA AGCTACAACC      180
TTCTTATCAA TACCTCCAAT GTCTCCCACA TTACCATCGC GGTCAATGGT ACCTGTACCG      240
GCAACAATAC GACCATTACG AAGATCTGGG TGAGCTATTT GAGTATAGAT AGCTAGACTA      300
AACATGAGAC CAGCACTTGG ACCGCCAATA CCAGCTGTTG AAAAGCTAAT TGGGACATTG      360
CTGATTACCT CTGTACGGTC AATCAAGCCG ATTCCAATTC CATTTTGGCC ATTTTCCAAG      420
GTGATGATTT TTCCTTCTGC AGACTTGGTT TGCCCATCCT CTTCATAGGT GACCTTGACG      480
GAATCCCCTA ATTTTGGAGA ACTGACGTAA TCAATCAAGT CTTTGGAAC TCAAAGGTC      540
TGATCATGTA CTGCTGTGAC TGTATCAGAG ATATTGAGAA TCCCTTTAAA GGTGAATTA      600
TCCGTCACAT TCAAAACATA AACTCCAAAG TACTTGAGTT CGATATCCTT ACCAGCTGTT      660
TTTAGTCCTT GATACTTGGC CATATTTTGC GATGTTTGCA TGTAGAATTG ATTGATTCGC      720
ATAAATTCAA CATCGGAAGA ACCACCTGTA GTCTCCTGAG CACTACGAAT ATCTGTAAAA      780
GGTGTC AACC AAGCATAAAT CATATGAGCT AAAGTGGCAT GTTGAACACC AACCGTAACG      840
AATTGT

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(2) INFORMATION FOR SEQ ID NO: 307:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 829 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 307:

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GCGATCTGCT TGGGCTTTC CTATTACCTT ATCTAATAAA TAGGTACGCA GACTCATAAC      60
CATATAAAGT CCACCCCCA TGGCACCGAC AAGAGCTACA TAAAAGAAGC TCCACAAACG      120
TCCACTTGGT TGGAAGAAAA ATCCTAACAG CCACTGGATG GTTCCTATTA ACAGAAACAT      180
GACTAGGGTC AGCAAAC TGA TTTAAATGGT TCGCTTCAA ATCACCTTGC GCTTGACACC      240

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1336

AGTTACTTTA CAAATATCCC GATACATCAA GACGTTAGGA ATGATGAGAG CAATGGTTGT	300
TGAAATCAAA GGACCATAAC TGTGGAAGAG GGCATGGTA GGTAGTTGCA AGACTAGCTT	360
GGCAATAGAA CCATAGATAA AATAGAGAAC GGCCTTGCGG TTGCGGAACA TGGCCTGAAG	420
CATTGGAGAC AAGACCATGT ACAAGCCTAA AATAATAGAC TGCAAACTG CAAAGACAAA	480
TAAGCCCAGA GCCAACTAT CTGGCTTACC ATAGAAGACC GTATAAAGAG GTTCTCCTAC	540
CATAACCACT CCAACCGTTG CTGGTAGCAA GAACATAAAG AGTAGGGTGA GACTGTCCTG	600
AACGAGACGA GAAGCTGCTT TCAAGTCCCC CTTGACATAG TTTTCCGTCA AAAGTGGCAA	660
ACCAACACTC CCAATCGAAA CCCCTACAGA AATCAAAATC ATCGTGATTT TATTAGGATT	720
GGCTGAGAAA TAAGAAAACA TGACAACCAA GTCCTCATTT CTGTAGTTGG TAAACCAGCT	780
CATACTATTG ATAAAGGTCA GCTGAGTCCA AATCTGGAAG AGCTGGATG	829

(2) INFORMATION FOR SEQ ID NO: 308:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 464 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 308:

CGAACATCTT GCTGGCTGAT TCGTCTGCCG CCATCGCAGC CCCGAACACA TTGCGACCCA	60
TGGCAAGCGG GCTCAATCCG CACATGGGAT CCGTGCCAAA GCCCCGCGTG TGCATCATTT	120
GCTCATCTAG TAACGTATGA GGTTCGCCTT CGCTGTCGAT AAACCGATAT TCAATCGCAC	180
CACTGCTCGT TCTCCGCGGA GGGGAAACCG ACTGCGGTAG GATGAAGTCC AGAGAAGAGA	240
GATCAGGACC TACCAGGTGC GGCTCGTTGA AGCTGTTGCC GCTTAGCAGC AGGCTCGCCA	300
CCACGCATTC CCAGAACTCA ACGGGGGTTT GATCGGCGTT CGGTTGCTGA CTAATAACTC	360
GGTGACGGG ATGCGAAGTG GCCACTTCTG GCACACCGTT CTTGTCTTCG TAGAGAGCAA	420
TTGGGAGGGT GGCCAGCGTT TCGGCGATGA GCGCACGCA GGCC	464

(2) INFORMATION FOR SEQ ID NO: 309:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 982 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 309:

1337

CCGTCTATAA TGGTAATAGA TTTTATTTGG AGGTTTTTAT GTCATTCTTA TCAAAAAATG	60
GAGCAGGTAT CTTGGCCTGC CTTCTCATTT CCATCCTATC TTGGTACTTA GGAGGATTCT	120
TCCCTGTGGT TGGCGCGCCC GTTTTGGCCA TTTTCATAGG CATGCTCCTA CATCCCTTTC	180
TCTCGTCCTA TAAACAACTG GATGCTGGTT TGACCTTTAG TTCCAAGAAG TTGCTCCAAT	240
ATGCCGTTGT CTTGCTTGGT TTTGGTCTCA ATATCTCGCA GGTCTTCGCA GTTGGCCAAT	300
CTTCACTCCC TGTCATCCTG TCCACTATCT CAATAGCTCT GATTATTGCC TACCTCTTCC	360
AGCGTTTCTT TGCCCTGGAT ACAAACCTGG CTACCTTGGT TGGAGTAGGT TCTTCTATCT	420
GTGGGGGTTC TGCCATTGCA GCGACAGGCC CGTTATTGAT GCTAAGGAAA AGGAAGTAGC	480
CCAAGCCATT TCCGTTATCT TTTTCTTCAA TGTCTTGGCT GCGCTCATCT TTCCAACCTT	540
CGGCACCTGG CTTTCTATCT CCAATGAAGG CTTGCGCCTC TTTGCAGGGA CTGCGGTCAA	600
CGACACTTCC TCTGTAACGG CTGCCGCCAG CGCTTGGGAC AGTCTTTACC AAAGCAATAC	660
CCTCGAGTCT GCAACCATTG TTAAACTCAC ACGTACTTTG GCCATTATCC CTATCACGCT	720
CTTCTATCC TACTGGCAAA GTCGCCAACA AGAAAACAAG CAAAGCCTGC AACTGAAAAA	780
AGTCTTCCCA CTTTTTATCC TTTACTTTAT CCTTGCCTCT CTCCTCACTA CACTACTCAC	840
CTCTCTAGGT GTGTCCAGTA GTTCTTTAC TCCTCTCAA GAACTCTCTA AATTCCTTAT	900
TGTCATGGAC ATGAGTGCTA TCGGTCTCAA AACCAATCTG GTCGCTATGG TCAAATCCAG	960
TGGAAAATCC ATTCATCATG GA	982

(2) INFORMATION FOR SEQ ID NO: 310:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1939 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 310:

CTAGCTGCCA ATATGATTGG GGTGCAGAAG CGCGTGATTA TCTTTAATCT TGGCTTGGTT	60
CCTGTGGTCA TGTTTAACCC AGTGCTTCTG TCCTTTGAAG GATCCTATGA GGCAGAAGAA	120
GGCTGTTTGT CCTTGGTAGG TGTGAGATCA ACTAAGCGTT ATGAAACCAT AAGGCTTGCC	180
TATCGTGACA GCAAGTGCCA GGAACAGACC ATTACCTTGA CAGGCTTCCC AGCTCAGATT	240
TGCCAGCATG AGCTGGATCA CTTGGAAGGA CGAATCATTT AGGAGGAAAG CAAATGAAAC	300
GAATAGTCTT TGAACCTATT TTTATCGCAA CGACCTGGTA TATCTTTTTA CCGCCCCTTA	360

1338

ACCTGACCAG CTGGGAATTT CTCTTCTTCC TCTGTGGGCA TTTGTTAGTT GTGGCAATAT	420
TATTTGGCTT TGGCAAGGGG ATAAACCTTG TCAAAACGGT TCATGTGCGC CACGGTAAGG	480
CGGAAGCTGC CTTAAATCTT GAGGGTTTCA AAATCAATCG GTTAGGGAAA ATTCTGTTAG	540
CTTCGATTGG AGGAATTCTT CTCTTGGCAG CTTTGGTTTc CTTGGTAACT TCCAGCATGT	600
TTCAGGCTAA AAATTATGCC AATGTAGTCA CGGTTACGGA AAAAGACTTT ACTGAATTC	660
CTAAGAGTGA CACCAGTAAG GTTCCTATCC TAGATAGAAG TACTGCTGAA AAAATTGGAG	720
ACCGCTACTT GGGTTCCCTA ACCGATAAGG TGTGCGAATA CGTAGCGGCA GATACCTATA	780
CCCAATTGAC AATTGATGGG AAACCTTATC GGGTCACACC ACTAGAATAT GCAGACCCTA	840
TCAAAATGGT TAACAATCAA GCCAAGGGAA TCGGTGAGTA TATTAAGGTG GACATGGTAA	900
CTGGAAATGC GGATTTGGTG GACTTGAAGA CACCAATCAA GTATTCAGAC TCGGAGTATT	960
TTAACCGTGA TGTCAAACGT CACCTGCGCT TGAAGTACCC GACCAAAATC TTTAAAACTC	1020
CATCTTTTGA GGTGGACGAT GAGGGCAATC CTTTCTATGT AGCAACGGTT TACCAAAAGC	1080
AATTTGGACT TGCTGTTCTT CGTCCTGCTT CAGTCATTAT CTTGGATGCT ACAAATGGAG	1140
AAACCAAGGA ATACAGCTTA TCAGATGTTT CAGAAATGGT GGACAGGATC TATCCAGCAG	1200
AGGAAACCAT TGAGCAAATC AACTACAACG GCAAGTACAA GGACGGTTTC TTGAATGCCA	1260
TGATTTCCAA GAAAAACGTG ACCCAGACTA CCAATGGCTA TAATTACTTG TCTATCGGTA	1320
ATGACATCTA TCTCTACACA GGTGTGACGT CGGCTAATGC GGATGAGAGT AATCTTGGTT	1380
TCATCCTTGA AAATATGCGA ACAGGAGAAA TCACTAAGTA TAGCTTGGCT TCTGCGACAG	1440
AAGAATCAGC CCGTGAATCA GCAGAAGGTG CTGTTTCAGGA GAAATCCTAC AAAGCAACCT	1500
TCCCAATCCT CATCAACCTC AATGACAAGC CTCTCTACAT CATGGGCTTG AAGGACAATG	1560
CTGGCTTGGT CAAAGAGTAC GCCCTGGTAG ACGCAGTCGA GTACCAAAAT GTTATCGTTG	1620
CTACTACAGT GGAAGAGATG CTCAGCAAGT ATGCCAATAA AAACGACCTT GAAATTGACA	1680
ATGCAACGAC AGAAAGCATC AATGGAGTAG TAGCAGACCT CAAATCAGCT GTTATCAAGG	1740
GAGACACTGT CTACTTCTTT AAAGTTGATG GCAACATCTA CAAGGTCAAG GCTTCAGTAT	1800
CCGATGACCT TCCTTACCTT GAAAATGGTA AAACCTTCGA AGGTCAAGTA GGAAAAGACA	1860
ATTATCTCAA GACCTTTAAG CTACGGTAAA AATAGGTTTT TTTCAGAAAG TATATGTTAT	1920
AATAAGGTAA ATTAAGCCG	1939

(2) INFORMATION FOR SEQ ID NO: 311:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 907 base pairs
 - (B) TYPE: nucleic acid

1339

(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 311:

CCTGCTAATA GAGAGAAAGA CTAGGAGTAG AAGTAAGCCA ATTAAATAAT GAGAAAGTTT	60
CATACCCCGT CCTTTCATGT AGATTGCGTA TCGAAAGATA TCTGCGGATA TAAATGTAAC	120
ATTATTTTTC TAATCTGTCA ATAAAATTTC TGACAATTTA ATAAATACAA CAAGGAGAGA	180
GCAACAAGAC TTTCTCCTTT GTTATCCTAT TCTAAAATGT TTTTACCTTA ATCTGATAAA	240
ATAATATCTT CGAGGGAGTA GCTAGCCGTC CAATCAAGAT ATTGTTTAGC TTTTGAAGCA	300
TCTGCTAGGA CACTGGCTGG GTCAC TAGCA CGTCGAGCAA CAATCTCGTG TGGGATTTTT	360
TAATTTAGTA ATTCTTCAGC AGTTTTAAAG ATTTCTTTGA TAGTATAGCC TTTTTTAGTT	420
CCTAAGTTAA AGATTGAGA AGAACTGTCT TCTTGAAATA GGTAGTTCAT TCCTTTAACA	480
TGAGCCTATG CAAGGTCAA GACATAAATG TAATCTCGAA TACATGAACC GTCACGTGTA	540
TCGTAGTCAT CTCCAAATAT TTTTAAGCTA TCATTTTGTC CCAATGCGGT CTTGTTGATA	600
TTTGGAATGA TGTGAGTTGG ATTTTTCACA CGCAGACCGT TTGAAGCATC CATTTAGCC	660
CCAGCAACAT TAAAGTAACG GAAAATAACA TATTTCCAGT CGTAGCGATT GGCCATCCAG	720
TAAATCATTC GTTCGCCCAT CAGTTTGTG TCTGCATAAG GGTGACAGG GTCGAGCAGG	780
GTATCTTCAG TCACCGGCTT GTCAATACAG TTATTTCCAT AGAGAGAAGC AGTCGAAGAG	840
AACATGATTT TTTGAATGCC AACTTCAGAT AAGACTTTGA GAACTTGTT CATACCAGCA	900
ACGTTGG	907

(2) INFORMATION FOR SEQ ID NO: 312:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 2170 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 312:

CCACATAAAG GTAAATATCT TTTGTACTAT CTTGGGCATC CAAGAAAAGC AATTGGGCAA	60
TAACAGAGTT AGCCATATTG TCTTCAACCG GACCTGTCAG CATAATGATG CGGTCTTTGA	120
GAAGACGTGA GTAAATATCG TAAGAACGTT CTCCACGGCT TGTGTTTCA ATAACTACAG	180
GAATCATTCA TTTCTCCTTT TGAGTTTAA TTTGTTGGT CAAATGACTG AAGATAAGAC	240

1340

TATTATAATA TCTTGGTCAA AAAAGGTCAA ATTTTTCGCTC TGCTTTCATT AGACAGAAAC	300
AAAAACCCAA CCTCCTTTCG TGAAGTGGAAA TACTTTTCCA AGTCATTCTT CTTTTCGATC	360
TTATTTTGTA CCGAACAAGC GGTCTCCAGC ATCTCCAAGA CCTGGAACGA TATAACCGTG	420
TTCGTTCAAA CGTTCATCCA AGGCTGCTGT AAAGATTCTT ACATCTGGAT GAGCTTCTTG	480
AAGGGCTTTT ACACCTCTG GAGCAGATAC AAGGCAGACA AATTTGATAT TTGATGCGCC	540
ACGTTTTTTA AGAGAATCAA CAGCCAAGAT TGCTGAGCCA CCTGTTGCCA ACATTGGGTC	600
TACTACAAAA ATTTGACGTT GGTCAATGTC CTCAGGCAAT TTCACCAAGT ATTCAACTGG	660
TTGAAGTGTT TCTTCATCAC GGTACATACC GATGTGGCCA ACTTTAGCAG CTGGAACCAA	720
GTTCAAGAGA CCATCAACCA TCCCAGATACC TGCACGCAAG ATTGGGACGA TGGCCAATTT	780
CTTACCTGCC AATTGTTTTT GAACTGTTTT TGTAATTGGT GTTTCGATTT CCACATCTTC	840
TAGTGGAAGA TCACGAAGTA CTTTCATACCC CATCAACATT GCAATCTCAT CTAAGTCTC	900
ACGAAAAGCT TTTGTAGAAG TATCTGTACG ACGCAAGATT GACAATTGTG GTTGAATCAG	960
TGGGTGATTA ATAACCTCAA TTTTCCCAT TTTTGGAAAT CCTTCTTCA ATTTATCTTT	1020
CTTATTATAC CAAAAACGG TTTAAAAATC TTTCTAAACC ATTTATTTTT GATAATTTTT	1080
ACATTAGATC AGCCTCTTTA AGAGCTGTCT GTACTGTCTC AAGTGGTAAA TGGGTCAATT	1140
CTGTCCCTTT TTCTTGATAA AGGTATTGGG CGTAGTCGTC CATTCCGTAC TGGTTGATAT	1200
AAACCACGCG CTTGCAGCCG ACCTGAAGCA ATTGTTTTGT ACAGTTGAGA CAAGGAAAAT	1260
GGGTACATA GGCTGTAAAG CCTTTGGGAA CACCACGCTC AGCACCTGA AGGATAGCAT	1320
TGACCTCAGC GTGAAGGGTG CGAACGCAGT GGCCTTCAAT GACCAAACAT TCGTGATCAA	1380
TACAATGCTC AGTCCCTGAC ACCGAACCAT TGAACCAAGT GGAAATAACC TTATTATCTT	1440
TTACCAGAAT CGCGCCCACT TTAGCACGTT TACAAGTGA ACGATTGCA ATTAGTAGAG	1500
CTTGGGCTGC AAAATACTCA TCCCAGGCCA GTCTTTTTC AGTCATCTCT TTTCTCCTTT	1560
TTCTCTATTT TTTAAAAAAT GGTAAACCTA AATCTGCAAT CTTTTCAGCT GGTACCTTCA	1620
TGCCATCCTT GATCCATTTT AGAAGGACAG AGACGATGGC TGAGCTCCAG AAGGAATGAA	1680
GATAAGAGCT GACACCTTTT GATTTCCTAT GGTATTTTC TAGAAATTCC TGCATGGCTT	1740
GGACAAAGAT TTTTCCAGA TGGTAATCCA AGGCCAATTG AATTACTCTA GCTTCCTTTC	1800
TGGCCTCCCG GAAAGGTGA ACCCAAACCA AATAAAGGTC TGTCTTTAAA TCGTAATGAT	1860
GCAGCTGTTT CATAATATTG TGGACAGTTC GTTTAAAGAC GCTCTCTAAA ATTTCTCTTT	1920
TGGAGTCATA ATTGCGATAA AAGGCCGCAC GCGAAACACC TGCACGTTTG ACCAATTCAG	1980
AAATACTAAT CTTGGTCAGT TCCTTTTTTT CCAAGAGTTG CAAGAGGGCT GTTTCATGG	2040

1341

CTTCTCTGGT TAATAAATG GATTCTTGGT TTGATTTTCT GAGATTTTCA AGAGACTTTT 2100
 CAGAGATTCT ACGTTCAGAC ATAACATTTT CTTTCTACTT GTCACAACAG ACGGATGATG 2160
 CTTTGTGTTT 2170

(2) INFORMATION FOR SEQ ID NO: 313:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 539 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 313:

ATCTGCACGA ATCAGGGCTT TCTAAGTGAC TATTTCCACC GAAATATTAT TTATATCAGG 60
 AGGACATTCA TATGTCACGT TATACAGGAC CATCTTGGA ACAAGCTCGT CGTCTTGCC 120
 TTTCACTTAC AGGTACAGGT AAAGAATTGG CACGTCGTAA CTACGTACCA GGACAACACG 180
 GACCAAACAA CCGTTCTAAA TTGTCAGAAT ACGGTTTGCA ATTGGCTGAA AAACAAAAC 240
 TTCGTTTCAC TTACGGTGTA GGTGAAAAC AATTCGTAA CTTGTTGTA CAAGCTACAA 300
 AAATCAAAGG CGGAATCCTA GGTTCAACT TTATGCTTCT TTTGGAACGT CGTTTGATA 360
 ACGTGTGTTT CCGTCTTGGT CTCGCGACTA CTCGTCGTCA AGCTCGTCAA TTCGTAAACC 420
 ACGGTCACAT CCTGTGTGAC GGGAAACGCG TTGATATCCC ATCATrCCGC GTAACCTCCAG 480
 GTCAAGTGAT CTCAGTTCGT GAAArATCAT TGAAAGTTCC AGCAATCCTT GAAGCAGTA 539

(2) INFORMATION FOR SEQ ID NO: 314:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 667 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 314:

CCGGTTTTGC TCCTTCTCTA CGGCTACGAC GTGATGTATC TCTGATGATA TCCACTGTTT 60
 CTGTAGCAGG CGTAGGTGTT TCTGGACCTG CTTGTTCTGC TTTTCTCTCT GCCGTCGTAT 120
 AGGAAACAGC TACCCTTGTT GGGGTTTCAT TGTATTCTCT TTCAAGTTTC TTAGGTCTAA 180
 CAGGACCTGG ACCTGGTCTT GATCCACTTT CTTCCGCTGG AGAAGAAGGT ACATCTTGAC 240
 TTGGATGACT TGGAACACCA GGAGTTTCTC TTGAATCTC ATCTGCTGGA GAAGCTGGTA 300

1342

CACCTTGACT TGGGTGAGTA GGCACGGTAG GAGCTTTTCT CATAATCTCC TCTACCGTTG	360
ACAAGGAATC AGCCATGAGT TCTTCAGTTG AAGGTTTCATT TGCAGGAGTG CGAACTACTG	420
CCTCATCTTC TTTCAGAACT TCATCATAGC CTTTTACTTT TTCTAAATCT CTCAGAATCT	480
GCTCTTTAAA GCGTAATTC TCTTCTGCTC TTGACTTTTC ACTCAAAAGT TTTTCCTCCT	540
TGTTGAGAAT CCATAATATT AGAGCTGAGA AGTCCAAAAA AAGCAATCTA TGATACTTTT	600
CCTAACGGAT TTTGTCAATT CCCAGACCAT ATCATACCAT GTTCCCCCTG CAAAGGTTGA	660
CTGGGAA	667

(2) INFORMATION FOR SEQ ID NO: 315:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1483 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 315:

GGGAAGCCAA GGTATTTTAT CGGATGAAGT TGTTACTAGT TCTTCACCGA TGGCTACAAA	60
AGAGTCTTCT AATGCAATTA CTAATGATTT AGATAATTCA CCAACTGTTA ATCAGAATCG	120
TTCTGCTGAA ATGATTGCCT CTAATTCAAC CACTAATGGT TTAGATAATT CGTTAAGTGT	180
TAATAGTATC AGCTCTAATG GACTATTTCG TTCCAATTCA CAATTAGACA ACAGAACAGT	240
TGAATCTACA GTAACATCTA CTAATGAAAA TAAGAGTTAT AAGGAAGATG TTATAAGTGA	300
CAGAATTATC AAAAAAGAAT TTGAAGATAC TGCTTTAAGT GTAAAAGATT ATGGTGCGGT	360
AGGTGATGGG ATTCATGATG ATCGACAAGC AATTCAAGAT GCAATAGATG CTGCAGCTCA	420
AGGGCTAGGT GGAGGAAATG TATATTTTCC TGAAGGAACT TATTTAGTAA AAGAAATTGT	480
TTTTTTAAAA AGTCATACAC ACTTAGAATT GAATGAGAAA GCTACAATTC TAAATGGTAT	540
AAATATTAAG AATCACCTTT CCATTGTTTT TATGACAGGT TTATTTACGG ATGATGGTGC	600
GCAAGTAGAA TGGGGCCCAA CAGAAGATAT TAGTTATTCT GGTGGTACGA TTGATATGAA	660
CGGTGCTTTG AATGAAGAAG GAACTAAAGC AAAAAATCTA CCACTTATAA ATTCTTCAGG	720
TGCATTTGCT ATTGGGAATT CAAATAACGT AACTATAAAA AATGTAACAT TCAAGGATAG	780
TTATCAAGGG CATGCTATTC AAATTGCAGG TTCGAAAAAT GTATTAGTTG ATAATTCTCG	840
TTTTCTTGGG CAAGCCTTAC CAAAACGAT GAAGGATGGG CAAATCATAA GTAAGGAGAG	900
CATTCAGATT GAACCATTAA CTAGAAAAGG TTTTCCTTAT GCCTTGAATG ATGATGGGAA	960
AAAATCTGAA AATGTGACTA TTCAAAATTC CTATTTTGGC AAAAGTGATA AATCTGGGGA	1020

1343

ATTAGTAACA GCAATTGGCA CACACTATCA AACATTGTCG ACACAGAACC CCTCTAATAT	1080
TAAAAATCAA AATAATCATT TTGATAACAT GATGTATGCA GGTGTACGTT TTACAGGATT	1140
CACTGATGTA TTAATCAAAG GAAATCGCTT TGATAAGAAA GTTAAAGGAG AGAGTGTACA	1200
TTATCGAGAA AGCGGAGCAG CTTTAGTAAA TGCTTATAGC TATAAAAACA CTAAAGACCT	1260
ATTAGATTTA AATAAACAGG TGGTTATCGC CGAAAATATA TTAAATATTG CCGATCCTAA	1320
AACAAAAGCG ATACGAGTTG CAAAAGATAG TGCAGAAaTwT TTAGGAAAAG TATCAGATAT	1380
TACTGTAACA AAAAATGTAA TTAATAATAA TTCTAAGGAA ACAGAACAAC CAAATATTGA	1440
ATTATTACGA GTTAGTGATA ATTTAGTAGT CTCAGAGAAT AGT	1483

(2) INFORMATION FOR SEQ ID NO: 316:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2453 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 316:

CCTGAACGCT TTTTATAAA TATCATAAAG CCAATCTGAT TTATCAAGTG TGTCTAAGCG	60
ACGCGAATTA AAATTCATTG CATACTCCAT CGCTTCTAAA AAATCATTT TTGAAAAGAC	120
GTAAATCA TCTAAATTCT GACTCCAATA TAATAACAAA ACCAATCCCA TAATATCCTC	180
TGGTTGATTA TTCAATAAAT TTAAGTTGGT TTCATAAAAC CCTGGAGTTC CAAATAGAGG	240
CAACTTTTT TCTCAATTT GAGTTTCTTT CCTTAGGGCA TGCTCAAAGT CTATAATATA	300
AATATTATTT CTATTATCAA TAAGTATATT ATTAAATGAT AAATCTCTAT AGGAAAAGATT	360
ATATTTGGAG TTTATTATCT CCATATAATC AATTAATGTT AAAAACCAAT CATACGAGCC	420
ACTAACCATA TTATACTCGC TTAATTTATC TGCAATAATA AACTCAAATT CCACAAAATA	480
CGAATTCCTT ATGTAAAAAT CGTTAAAAAC TTTTGGAGTA AATTCCTCCT TTTCCAATTC	540
TACTAATATT TCTCTTTCAT TTATTAAACG ATTCACAGAA TCTCTATTTG TAAAATCAAC	600
CAACGATAAA TCACTAGCTT CTTTAAATAA AGAATAAACT CGCTTTTGAG TATTAAATAC	660
TTTATAAACT CCACCTTTGG CATTTT TAGA AATCACTTCC AAAATAATAT ATTGATCAGG	720
AATAGTGTTA TATCTTGGA TATAGTAATC CCTTATTGGA ACATTACAT TTGAAGGGAT	780
TTTCTTATCT CTTTATCCT TGAAAGTGCT ATCTTTTACG AACTCCCCAT ATCTGTAATA	840
TACAACCTCG CTAAGTTGAA ATCTGAAATC TGATGGTATG TTTACACCCT TTACACCTTT	900

1344

ATACAATATT TCTAATTTGT GTAACAAACG TTGAAACTCT TTATTATCTT TTGGATAAAT	960
TGTAATGAAT TTCCCGACTT GTGAATAACC ATTAAGCCCT GTATTTTGCA AAGAAAGTTC	1020
TTTAATGCTA ACCAAAATTT TGAAATTTAT CTTCTTCTCT CTAGAAAATA TAAAATCAAA	1080
GAATTTTTTA GCAACCAAAT TAGCATTTAA TATTGAAGCG CTCAGGTGTA TTTTAAATCC	1140
CTTAGATTGG GTGATATTAG ACGGCAAATT ATATAACCAA TGTTTCATCAC TAAAATTATC	1200
ACTAATTTTA TATTCTAATA ATAAATTATG GTATGCGTCT TCTATTTTCTAG TTTTCATAGTC	1260
CAATAGTTT AAATACTTTT CGTAATTCAT ATTAAGAAAT CTTCTCCATA AATTTTCTAG	1320
CCATCATTTA AAGCCAAACA ATTTAAAGCG TGATAATAAA TGTGATAAT CAATGTAAC	1380
TTAGTCTCTC TATTTTGTA TTTCTTCACC AATAATTTTA TGCTATATCT ATTTTCTCGA	1440
GGCAATTTAT AGGACTTCAA GATAAAACCA TAAAAGAGAT AAGTATTATA ATCTGACAAT	1500
CCAGTTTCTAG AATAATTTT TAGAAAAATA TCTAGTGATT CTGATAATTC ATCCGGAATA	1560
ATTCTTTTAA CATCGTATTT ATTTTTCATA TCGGCCACTC TTCCTTAAAA AGCTCACAAT	1620
AAAATTTTAA ATTTCTATAC AACAATCCGA GAGTAGTCTC ACAATTTGAA CATTTTCACAT	1680
CACTCTTAAT ATATAAAAA TGAATTAATC AGAAACCTCT GACTAAGATT TCCTAATTA	1740
TTCACTTTCT ATATCATAGT AAGGAATTCT ATTATCCCTA ATTGAAAATT GAAATTTTAT	1800
GTTTTATATA TTAACAATTA TGCGGATTGT AAATCTTGTC TAACAAAATG GCAAGTGCTA	1860
CTATGTGCCC CAGAAGGCGA TGCAACGCTA TTTTGAATTG AAAGAGCATA ATCATCCATA	1920
TCATTTAAGT CACGGATTAG CAATGCTTCC TTCTCTCTC CGACAATTCC AAATTTTCTA	1980
ATTACCTTTT CAGGATTATC AAAAAATTCT CCAACAACCT CCATATTTCC TTGAAGTTCA	2040
TTCAAGAAAG CTTTCATTTG ACTACTCATT ATATAGCTCC TTTTCTATTA CTTTATTG	2100
AATCAAACT TACTTGTACA TTGGAACAC CTCTATTCTA CGCTTTCATA TTGCTGCATG	2160
ACACTTTCAA AATCAAATTG CTAAAAATA TTTTPTAAAG CTTAATTTAG ATTTAATTAC	2220
ATATATCTCA AAAAAATGTT TTGAAATTAG TAAATTAAAA TAGGTTTCTG TACTTATAGG	2280
AACTAGTTAT AAAAACTTCG CCCATCATAA AATATCTATT TAAGTAAAC AAAAAATTTA	2340
TAATTTTTTG ATTTTAAAGT GACTATAATC TCCTATCTAT AAATACCATT CGCAGGACCT	2400
GGATCAATCC CTCTAGCCAT CTTATGAACT TGAGTTCCTC CAGACAGTCC CGG	2453

(2) INFORMATION FOR SEQ ID NO: 317:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1049 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

1345

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 317:

CCAATTTGAA GGCTCTAAAA CAATGGAAAA GTGCTACACA GATGTGACAG AATTTGCCAT	60
TCCAGCAgTA CTCAAAAAC TTAATTATCA CCAGTTTATG ATGGCTTTAA CAGCGAAATT	120
ATTGCTTTTA ATCTTTCTTG TTCGCCTAAT TTAGAATAAG TACAAACAAT GTTGAACAG	180
GCATTCAAAG AGAAGCACTA TGAGAATACG ATTCTCCATA GTGACCAAGG CTGGCAATAC	240
CAACACGATT CTTATCATCG GTTCCTAGAG AGTAAGGGAA TTCAAGCATC CATGTCACGC	300
AAGGGCAACA GCCCAGACAA CGGCATGATG GAATCTTTCT TTGGCATT TT GAAATCGGAG	360
ATGTTTTATG GTTATGAGAA GAACTTTAGA TCTTTAGAAA ACCTTGAACA AGCTATTGTG	420
GACTACATTG ATTATTACAA CAACAAGAGA ATTAAGGTAA AGCTAAAAGG ACTTAGCCCT	480
GTGCAATACA GAACTAAATC CTTGCGATAA ATTAATTGTC TAACTTTTGG GGTGCAGTAC	540
ATTTTTGGTA TATATAAAAT TTGTAGGAGC TATATCTACA ATTTTATATT CCCAGTTTAT	600
GGATGTAAC TACTATATTC ACAATGTTAT CCAGTGTTTT TTCTCTAATA TTTAAGGAGT	660
GTCTCTGTTT TCGAATAAAT TCTTCAAAGT TTAACCCGTC AACTTGTTCC TGAACAAGAA	720
AATAATCATC CACGATATAA AATTCATCAG TTAATTAGT AGTATAACTT TTATCGGCTA	780
ATTTTTTTAG CATGTGAGCT TCATTTTTTA TATCATCAAG AGCTGTCCAT TCTCCTCAG	840
CATCATAATT CACAAAAGGT CTTGACTGCT TGATGATTAC TTTTGGCCG TCCGATTTTC	900
TAATTGCCCC ATAAACATTT CCTTTATTTG ATCTCTTAAT AATTTTTTCC ATTTGTATT	960
TATTTATTGC AGAGTCCTTA CTTGAAACTT CACATGTGGT TTGAAAATAA ATCCTTTTTT	1020
CTTCTTCTGA AAATAAATCC ATTTTCCGG	1049

(2) INFORMATION FOR SEQ ID NO: 318:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 776 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 318:

TTAGTTGGTT AGAATCAGAA AATCGCCGAA GTGGTTATTT ATTTTGAAT AAATTTAACG	60
AACCAATTAC AGCAAGAGGA GTTGCTCAAC AGTTAAAAA TTATGCTGAT AAATACAAA	120
TGAATCCTAA AGTAATTTAC CCTCATCTT TTAGGCATTT ATTTGCTAAG AATTTTTTAG	180

1346

CGAAGTATAA TGATATTGCC TTGCTTGCAG ATTTGATGGG ACACGAAAGT ATAGAAACTA	240
CTCGAATTTA TCTAAGGAAA ACAGCTACTG AACAAACAAA TATTGTAGAT AAAATGTGTA	300
ATTGGTAAAA AATAACAGGT GGTCAAACCTG ACTACCTGCT ATTTTGTGTA TTATGGCTCT	360
TATTATGGGA ATATACCTAT GAATTGGGTT GTTATAAAAA TAAAAGATAT TTTTCAATA	420
AATACAGGTC TTTCTTACAA GAAGGGCGAT TTAAGCATTA ATAATAAAGG TGTTAGAATT	480
ATACGTGGTG GTAATATTAA GCCTTTAGAA TTTTCTCTGT TGGATAATGA TTAATACATT	540
GATACACAAT TCATCTCCTC TGAGCAAGTT TATTTAAAC ATAATCAGCT AATAACACCT	600
GTATCAACCT CTTTAGAACA TATTGGAAG TTGCAAGAA TCGAGAAAGA CTATGATGGT	660
GTTGTGGCTG GTGGATGTAT TTTCCAATTA ACACCATTCG AAAGTGCAGA GATGATGTCA	720
AAATGTCTAT TATGTAACCT GTCCTCTCCG TTATTTTATA AACAATTGAA AGCAAT	776

(2) INFORMATION FOR SEQ ID NO: 319:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 658 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 319:

TGCAATGCGG CGGCTGCATA CGCTTGATCC GGCTACCTGC CCATTCGACC ACCAAGCGAA	60
ACATCGCATC GAGCGAGCAC GTACTCGGAT GGAAGCCGGT CTTGTCGATC AGGATGATCT	120
GGACGAAGAG CATCAGGGGC TCGCGCCACC GAACTGTTCTG CCAGGCTCAA GCGCGCATG	180
CCCGACGGCG AGGATCTCGT CGTGACCCAT GCGGATGCCT GCTTGCCGAA TATCATGGTG	240
GAAAATGGCC GCTTTTCTGG ATTCATCGAC TGTGGCCGGC TGGGTGTGGC GGACCGCTAT	300
CAGGACATAG CGTTGGCTAC CCGTGATATT GCTGAAGAGC TTGGCGGCGA ATGGGCTGAC	360
CGCTTCCTCG TGCTTTACGG TATCGCCGCT CCCGATTCGC AGCGCATCGC CTTCTATCGC	420
CTTCTTGACG AGTTCTTCTG AGCGGGACTC TGGGGTTCGA TGTCGACAGC CCGCCTAATG	480
AGCGGGCTTT TTTTTCCTGA GGCTGGACGA CCTCGCGGAG TTCTACCGGC AGTGCAAATC	540
CGTCGGCATC CAGGAAACCA GCAGCGGCTA TCCGCGCATC CATGCCCCCG AACTGCAGGA	600
GTGGGGAGGC ACGATGGCCG CTTTGGTCCC GGATCAATTC GCGCGACCGG ATCGATCC	658

(2) INFORMATION FOR SEQ ID NO: 320:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1475 base pairs
 - (B) TYPE: nucleic acid

1347

(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 320:

CCGGCTTAAT TTTTAGAAAA CGTGGGCAGG GAACCTTTGT TCTCTCTCGT GGCAGCTCAA	60
AAAGAAAATT AATCGTTCCA GAAAGAGATA TCCGGGGACT GACAAAAATA TCTGAAGATG	120
CTCATTTCTAC AATTGACTCG AGGATTATTC ACTTCAAATT AGAATTTGCA AATGAATTTT	180
TAGCAGAAAA ACTACAGGTC GCTTTGCAGA GTCCAGTTTA TAATATTTAC CGCCTGCGTA	240
TTATTGACGG TAAACCTTAT GTTCTGGAAC AAACCTATAT GAGTACCGAT GTTATTCAG	300
GTATTACTGA AGATATTTTA CAAAAATCGA TTTACAATTA CATTGAAGGA AAGTTAGGAT	360
TGCATATTGC CAGTGCTACA AAAATCTTAC GAGCTTCTTC TAGTTCAGAA AATGAGCAAC	420
ATTACTTGCA GCTCCTTCCA ACGGAACCGG TATTTGAAGT AGAACAAGTG GCTTATTTGG	480
ATAACGAAC TCCGTTTGAG TACTCGATTA GTCGTCATCG CTATGATTTA TTTGAATTTA	540
ATTCTTTTGC ATTACGACAT TCCTCCTAGG AGAAAATGTG AAAATGAAGC CAATCTTTTA	600
CAGACTCTAG TTTAAGAAAA ATTTAAAACA GGGCAAGAAG GTCCCATCTA TGCTTAAATG	660
GTTTCTCTTT TCTAAATAAG ATGGCTTTAA AAGAGTGATC GTTGATCCA TCATGTTGAA	720
AAATATCTTC GTATAGCTTA TAGAGTAGGT ACTGAAATTG TTCACCTGAT CTACTTCTTA	780
TAGTTATTTA GTTTTAAATA GTGTTTCAAA CATTTCTACA CTGACGAGAA GTTTTGTAGT	840
CTTTTCTTGT AACACATATA GTATACTGTG GTTAGAATAG TAGACTGTGA CTTCTAACAA	900
ATTGCTAGAA ATGAATTTCA ATCTCCAAT TTATTTGTTC ATATCTTCTT TTAATATATT	960
AAATAAATTC TAAATCATAA TCATTTAAAA AAATTTTATT TTTTATTTT CATTACGAAT	1020
AATATAGATG AAGGGGAAAG AGTATGAAAA CAGAACTGTT TCTTTTGCTA TTAGTTCAAA	1080
AGGAGAAAAA ATGAAAGTAG AAAATATTTT GTATAGGGTG GATCATCGTA AATTGTTTGA	1140
TAATATTTCT TTTGATACTT CGAGTTCAGA CGTGACATTA ATTACTGGTA AAAATGGTAC	1200
AGGAAAGTCA ACTTTACTAT AGTAGATTGA AACTAGAATA GTACACATCT ACTTCTAAAA	1260
TATTGTTAGA AATCGATTTG ACTATCCTGA TCTATTTGTC CTGTTCTTAT TTCATTTTAC	1320
TATATCTCAA ATTGAGTATG ACGAAGTGCG CTCCCATGTC CTGGGAACGC ACTTTCTTCA	1380
TATTTTTCAT ATTCTTGAAT CCATCGATAA AGACTATTGG GATGAATTTT TAAAGTTGAA	1440
CTAATCATTT TTACAGGATG AGATTTACAG CAGAG	1475

(2) INFORMATION FOR SEQ ID NO: 321:

1348

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 560 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 321:

GAAATATATA TACTTCATCT TAATAGTGAG CAAGCTAAAC TTAGCATTTC ATGCCCTCAT	60
ATGGGATGTT CTTTGACTAA ATAATATGAT TATCGAGATA TATCTGGATA AATGAACTAA	120
TAAGTCTGAC GCGTAGACTT ATCAAAGTCA TTGGCATACA CCACTATGAA CTCGTTGGTC	180
TGTTCAAATC CCAACACATT ACCTGAGAAG AAAGTTGCAA TGTGTGTTTTT GGTGCGGGTT	240
TGAATTTAAA AAATTGTTA TGTAAGTACCT AATCTAAGGA ATTAGAACAA TGCCTCTAAT	300
TTTCTTTTAA TACACTGAAA CATTGATGAT TCTGGCTGTA TTTTGTAAAC AGCTCTTCTT	360
TGCTCCTGGA AAATATCTTC AGAAGTTATA TTCTCTATTC CTAACGCTAC TTGAGTTTTT	420
TTTCTAAAAT ATTCTTTTCC GTTGCCATCT TTAGAAAAAT CATAACCTTC CCTATCTACG	480
CTGTTACACA AATTAGCTAA AAAA r ACTCT GGGGTGGGA AAGGAAGATA AGAAaCGTAT	540
TTAGCCCATATA ATCTATAAAG	560

(2) INFORMATION FOR SEQ ID NO: 322:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 643 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 322:

CCGCCCCGCC ACCGCTGCCT ATCCTCGGGA GAGGGTCACC TGGAGTGAAC CTAGAACGAT	60
AGACACGGTG CGGTACGACC TCGTACTACT TTCGCCGACG GCCTCGTCCG TTGTCATCCA	120
CGAACTGATC GGACATGGGT GCGAACACTT CAGAGAAAAA ATCGTTGGAC TGCGTGTCGG	180
GCCTGAGGAA CTACGGGTGG TGGCTTTTCC GAAGAACGGC TCCGGGTTTG ATGACGAGGG	240
TACACCCTCC GAAGAGATTG TACTTGTGGA GAACGGCATT GTGAGGCACG CTGTCAGGGA	300
TCGGGCGACT GGAGGAATGG CGCCTTTTTC CGGTTTGACC AAAGTGGCAT CACATGGTGT	360
CAAACCTGGC TCAAGATGTA CGCATCTCAA GGC G AAGGG GAATCGTCAC AGGAAGGAGT	420
TACCGGAGTA CCCGCCGAAC GCACCGTTTG GATAGAGCAT TTTTCTGCAG CGAACTACCA	480
TTCAGGTCGA GCCTTTTCA GGTCTGGCCT TGCCTGGGTA GGCAGCCGAG AAGAACTCTT	540

1349

ATATCCCTTA ATGCCTTTCA CCATGTCAAT TGATATCTAC GAACTGGCCA GCTTATTGTG 600
GCATTTAGAC GGTCAAACGG AACGAGCAGC TAGGCTACTG TGC 643

(2) INFORMATION FOR SEQ ID NO: 323:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 780 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 323:

GGTACCCACT CATTCTTGAT GAATTGTGAA CAGTTGCCCT TGGGTCGTTT TCGGAGTTGA 60
AGTCAAGAAG AGGAAAAAAA CAAAAAGGAG AAATACTCAT GGCAGTAATT TCAATGAAAC 120
AACTTCTTGA GGCTGGTGTA CACTTTGGTC ACCAAACTCG TCGCTGGAAT CCTAAGATGG 180
CTAAGTACAT CTTTACTGAA CGTAACGGAA TCCACGTTAT CGACTTGCAA CAACTGTAA 240
AATACGCTGA CCAAGCATAC GACTTCATGC GTGATGCAGC AGCTAACGAT GCAGTTGTAT 300
TGTTTCGTTGG TACTAAGAAA CAAGCAGCTG ATGCAGTTGC TGAAGAAGCA GTACGTTTCAG 360
GTCAATACTT CATCAACCAC CGTTGGTTGG GTGGAAGTCT TACAAACTGG GGAACAATCC 420
AAAAACGTAT CGCTCGTTTG AAAGAAATTA AACGTATGGA AGAAGATGGA ACTTTCGAAG 480
TTCTTCCTAA GAAAGAAGTT GCACCTCTTA ACAACAACG TCGCGCTCTT GAAAAATTCT 540
TGGGCGGTAT CGAAGATATG CCTCGTATCC CAGATGTGAT GTACGTAATG ACCCACATAA 600
AGAGCAAATC GCTGTTAAAG AAGCTAAAAA ATTGGGAATC CCAGTTGTAG CGATGGTTGA 660
CACCAATACT GATCCAGATG ATATCGATGT AATCATCCCA GCTAACGATG ACGCTATCCG 720
TGCTGTAAAA TTGATCACAG CTAATTGGC TGACGCTATT ATCGAAGGAC GTCAAGGTGT 780

(2) INFORMATION FOR SEQ ID NO: 324:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 624 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 324:

CGGGAAAAAT CAGATTGTGG GTTCAGATAT CGAATTAGCC AAGGCTATCG CAACAAAAC 60
AGGTGTCGAA TTGGAAGTAT CTCCCATGAG TTTTGATAAT GTACTGGCTA GTGTTCAATC 120

1350

AGGAAAAGCC GACCTTGCCA TATCAGGTGT TTCTAAGACA GATGAACGGA GCAAGGTGTT	180
TGACTTTTCC ATTCCTACT ATACTGCAAA AAATAAACTC ATTGTCAAAA AATCTGACTT	240
GACTACTTAT CAGTCTGTAA ACGACTTGGC GCAGAAAAAG GTTGGAGCGC AGAAAGGTTC	300
GATTCAAGAG ACGATGGCGA AAGATTGCT ACAAATTCT TCCCTCGTAT CTCTGCCTAA	360
AAATGGGAAT TTAATCACAG ATTTAAATC AGGACAAGTG GATGCCGTA TCTTTGAAGA	420
ACCTGTTTCC AAGGGATTG TGGAAAATAA TCCTGATTTA GCAATCGCAG ACCTCAATTT	480
TGAAAAAGAG CAAGATGATT CCTACGCGT AGCCATgAAA AAAGATAGCA AGAAATTGAA	540
AGAGGCAGTT CGATAAAACC ATTCAAAAGT TGAAGGAGTC TGGGAATTA GACAACTCA	600
TTGAGGAAGC CTTATAAGCA TCCA	624

(2) INFORMATION FOR SEQ ID NO: 325:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1237 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 325:

TCTTATGAAG CCGAAGCGTG ATTTATGGCG GATAGGTTTG GTCTGCAGAA AGTGACAAAT	60
CTAGTGCCAT CAGCGTATAT GGAATCTnTG GCTGAGAAAC AGTCCCGGGG TGAAGTACT	120
TATGAGCAGG TTTATGAGGA TGCAACGGCT TATCATCATA CCATTGATGC GAGTACAGAG	180
GAGGCAGACT TGGTTTCTCT ACGTATTGTA GAACTATTGT CTCGAAGAGG CTTTAGCTTC	240
AGTCCTGCGA TCTTACTTGC TATTATAAG GAGTGTGTTT AAGATATATT TGAACCTCG	300
ATTCCGGTAG GTCAATTTTCG TCAGACTAAT ATCACAAGA ATGAACCTGT TTTGAATGGT	360
GAAAGTGTG TGTACTCTGA TTAATCCATG ATTCAAATGA CCTTGGATTA TGATTTTAAT	420
CAGGAAAAAC AAGTTGCATA TGCAGACTA ACCCAGGCGG ATATGGTTAA AAAAATCCAG	480
CATTTTATTT CAGGAATCTG GCAGATTCAT CCATTTGCGG AAGGAAACAC TCGGACGGTA	540
ACGGTATTTT TGATTAGTA TCTTCGTGAG TTTGGTTTGT ATATTGATAA TACACCATTT	600
CAGCAACATT CCAAGTATTT TCGTGATGCC TTAGTGTTAG ATAATGCAAA GATTTTACAG	660
CGACGTCCTG AGTTTTTAAC AGCTTTTTTT GAAATCTCT TGCTCGGTGG TCAAAATGAT	720
TTGTCTTCAG AAAAAATGTA TCTAGATTTA GACCTCGATC TTTCATAATC CTAATACTGA	780
GTAAACATTG AATTTTAGGA AAAAATGAAG TAAATATTCT CACAAGAAAA CGTATATCAT	840
CAAAGTTTGG CTCTTTGTCA ATTGTAGTGG GTTGAAGAAA AGCTAAGTTC GAGAAAGGGC	900

1351

AAATTCGGC CTTTCCTTTT TGATGTTTCAG AGCGATAAAA ATCCGGTTTT TTGAAGTTTT	960
CAAAGTTTCG AAAACCAAAG GCATTGCGCT TGATAAGTTT GATGAGATTA TTGGGCGCTT	1020
CCAGTTTGGC ATTAGAATAG TGTAGTTGAA GGGCGTTGAT AACCTTTTCT TTATCTTTGA	1080
GGAAGGGTTT AAAGACAGTC TGAAAAATAG GATGAACCTG CTTAAGATTG TCCTCGATAA	1140
GTTCGAAAAA TTTCTCCGGG TCCTTATTCT GAAAGTGAAA CAGCAAGAGT TTGAAGAGCC	1200
GATAGTGATG TATCAAGTCT TGTGAATAGC TCAAAAG	1237

(2) INFORMATION FOR SEQ ID NO: 326:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 461 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 326:

TTTGATTTTT CTGAATTAGA AGAGATTGAA TTGCCTGCAT CTCTAGAATA TATTGGAACA	60
AGTGCATTTT CTTTGTAGTCA AAAATTGAAA AAGCTAACCT TTTCTCAAG TTCAAAATTA	120
GAATTAATAT CACATGAGGC TTTTGCTAAT TTATCAAATT TAGAGAACT AACATTACCA	180
AAATCGGTTA AAACATTAGG AAGTAATCTA TTTAGACTCA CTACTAGCTT AAAACATGTT	240
GATGTTGAAG AAGGAAATGA ATCGTTTGCC TCAGTTGATG GTGTTTGTGTT TTCAAAAGAT	300
AAAACCCAAT TAATTATTAT TCCAAGTCAA AAAAATGACG AAAGTTATAA AACGCCTAAG	360
GAGACAAAAG AACTTGCATC ATATTCGTTT AATAAAAAAT CTTACTTGAA AAAACTCGAA	420
TTGAATGAAG GTTTAGAAAA AATCGGTACT TTTGCATTG C	461

(2) INFORMATION FOR SEQ ID NO: 327:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1436 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 327:

TAACATTTAG GTACCTCTTC TTAACAAAGT TCAATAGTAA CAATTAATAT TTAAACAAT	60
ATATCAAACA TCAATGACTA GAATACTTGC ATCATCCTTC TTTCCATAGA TTGGATCAAT	120
AGCAGAAGAA TTAAATCTCA TCTTAATTAA CTCTCAAAA GTTTTATTTT GATTATTTTG	180

1352

ATAGAATTCA TAAAAGCCAT CGCTCATTAA AACAAATTTGT TCACTAGTAA CATCTATTTG	240
ATTAATAATA GCATGGTCTA AAAATCTCTC ATCCAACGAA CCTATCCAGT ACCCACTCGG	300
TTGATTAGAT AATTTTCTGA TTTTGTGTA AATAATTTT TTATTTAAAA CACTATTTGT	360
ACCAATTGAA TCTTTTATCT CATTTTCCC TTTTCAAAT AAGTTATCTA CTCTATGATC	420
AGTTATTTCC ATTTCTGTTA CTAACATGAC GCAGTCACCT AGCATCATAT ACTCCAACCT	480
TTTTTCTGAA AGTTTAGCAA ATATTGGTAA GCGATAATAT AGTATATTGA AACTAGAATA	540
GTACACCTCT ACTTCTAAAA CATTGTGAGA AATCGATTG ACTGTCCTGA TTGATTTGTC	600
CTATTATTAT TTCATTTTAC TATACTCTGT TAATTTATAT GAGTTTAAAC CGATTTTCATC	660
TTTAACCTCG AGTAAAGCAG TTTCAAATAT TGTTTAAGA GTTTTGTGATT CTTTACAATT	720
AACCGACAAA CTTTCTGATA AAATATGTAC AACTTCTGAG ACTGAATAAC CTATCTCCTC	780
TTTAGAATTA TATAAATCTG TAGCTCCACC AATAATCCAA AAATACTGAT TTTGTGAACC	840
TACAATATCC TCATTTTCTA CGGAACCTCC TGTATCGAA CAAATTTTAT TTATCTTTAC	900
CATAATACTT CAACCCTTTT AGTGTCAAAA GTAAACCAAT TCCTGTCACT GTTAAGAATA	960
GTCCATAAT CTTATTCGAA CCAGTCTTTG GTAATTTTGT TTTKACATCT ACTATyTCTT	1020
TAGATTTATT AATATGATTT TCAGTTTCTC TGCCATCTCC AACTATTTTA TAGTTTACTT	1080
CTTCTGTCTT ATTATCTTGT TTATTGTCGA TCTTGTCATT CATTGTCTA TTATCTTTAC	1140
TTGAGTTAAA CTCTCCGTTT TTCTGGTTAC TATCAATTAC ATTATTTGAA TTAGATTGTT	1200
TTTCTCTTTT GTTTTTTCTT TTTTCGTTTT TATCACTTAA ATTATTTGTT ACAATTTTGT	1260
AAAGCCCATT CTCCGTTACA ATATTGAAAT TACCATCGCT ATCACGTATA ACAGGTTCTT	1320
TCCCATTTGC ATTAGATTTG ATGAATGATA TATACTTACC GGATAAATTA TAAAATTGGT	1380
TATTTAAAAC GGTTATTTTA CCCTTTGAAT CCTCAATAAC AATTCCTTCT TTACCC	1436

(2) INFORMATION FOR SEQ ID NO: 328:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 646 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 328:

CCGGCAGACA GGAGAAGGTG TTAAATATCA ATCTCAAATG GTTCGTCAAT GGTTTCTGAT	60
ACGTATTTTC CGTCTTCTT CCGTTGCTTG ACACACTCTG TGAGGAGATA TTCGATTTGC	120
CCATTGACTG AACGAAAGTC GTCTTCTGCC CATGATGCGA GTGCAGCGTA TAACTTTGTT	180

1353

GAGAGTCGAA GGGGGATCTG CTTTTTTTTTA GCTTCAGCCA TCTTTAGTAA AGGCTTCCTG	240
TGTTGACAAT TGGTTGTGCA TCATGATTGC CACAAAGAAC GACAAGGAGA TTTGAAACCA	300
TGGCAGCTTT TCGTTCCTCG TCAAGTTCTA CCAATTCCTC TTCATTGAGC CGTTCCTAGTG	360
CCATTTCAAC CATTCCTACA GCACCATCTA CAATCATCTT CCGTGCATCA ATAATGGCAG	420
ATGCTTGTG GCGTTGAAGC ATAACGGCAG CAATTTCTGG AGCATAAGCT AGGTAAGTGA	480
TACGTGCTTC AAGGATTTCC AAGCCAGCAT CCTCAACACG ACTTTGGATT TCTTCACGAA	540
TACGGGTAGC AACAAATTCG CTAGAGCCAC GGAGACTACC TTCATCTGCG TGCCCATCAC	600
CCGGAGTATC CACATTAGGA GACACATCGT AAGGATAGAT GCGGAC	646

(2) INFORMATION FOR SEQ ID NO: 329:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1653 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 329:

GTTGCAGGTG CAGTAGGTGT TACTTCAGAT ACATTTGAAC GTGCAGAGGC TCTTTTGTAG	60
GCAGGAGCGG ATGCGATTGT TATTGATACT GCACATGGTC ATTCTGCAGG TGTCTTGCCT	120
AAAATTGCCG AGATTCGTGC TCATTTCCCA GATCGGACTT TGATTGCTGG AAATATTGCT	180
ACTGCTGAAG GTGCACGTGC CCTTTATGAA GCGGGTGTAG ACGTTGTAA GGTGGGTATT	240
GGACCAGGTT CTATCTGTAC TACTCGTGTG ATTGCTGGTG TTGGTGTTC GCAAGTAACA	300
GCTATCTACG ATGCTGCAGC TGTTCGCGCG GAATATGGTA AAACGATTAT TGCTGACGGT	360
GGGATCAAGT ATTCTGGAGA TATTGTAAAA GCACTTGCTG CAGGTGGAAA TGCTGTTATG	420
CTTGGATCTA TGTTTGTCTG AACTGATGAA GCTCCAGGCG AAACGAAAT CTTCGAAGGA	480
CGTAAATTCA AGACTTACCG TGGTATGGGA TCAATTGCTG CTATGAAGAA AGGTTCAAGC	540
GACCGTTATT TCCAAGGTT TGTCAATGAA GCAAACAAGC TTGTTCCAGA AGGAATTGAA	600
GGTCGTGTTG CTTATAAAGG AGCGGCAGCT GATATTGTTT TCCAAATGAT TGGTGGTATT	660
CGCTCTGGTA TGGGTTACTG TGGTGCAGCT AACCTTAAAG AACTACACGA TAATGCTCAA	720
TTTATTGAAA TGTCTGGTGC TGGTTTGAAG GAAAGCCATC CTCATGATGT GCAAATTACT	780
AATGAGGCAC CAAATTATTC TATGTAAAA ACAATGAAAA GAACTCCAGT GAAAACAGGA	840
GTTCTTTTAC AATGTTGTCA ATTTCCATTT ACAGCAGCTT TACCATCCTG AATAGTGAAG	900

1354

ATACTTAGAT TTTCTGGCAG ATTTTGAAGA TGGTCTAAGC TTGTTGTTGT GATAAAGGTT	960
TGGATTGATT GAGAAATCGT TTCTAATAAT TTTAACTGTC TAGTGTGTC AAGTTCACCTC	1020
ATCACATCGT CAAGCAGTAA TATAGGAGAT TCTGTGGTAA TGCTTTCCAT TAATTCGATT	1080
TCTGCTAATT TTATCGAGAG GACGAGACTA CGATGTTGAC CTTGGCTTCC GAAACTAGCA	1140
TCCATCCCAT TTATATAAAA AGAAATGTCA TCTCGATGAG GACCGACACC AGTATTCTTT	1200
TTAAATAAAT CTCTGGATCT ACTTTTTTCT AAAGCAATTT TGAAAGATTC GGATAAGTTT	1260
TGTTTGTCAG TTATATTGAC AGAAGATTGA TAGGATATTG ACAACTCTTC GATCTGATTA	1320
GAGAGTCAA AATGTTTCTT ACGCCCAAAT GATTCTAGTT TTTTATGAA ATCTAAGCGG	1380
TGATTCATTA CACGACATCC ATAATCAACT AGCTGATCAT CTAACACAGA AAGGAATGTT	1440
TCATCTATTT TTTGAGCTGA TTTTAGGTAA GTGTTTCTTT GCTTTAGGAT GTGGTTATAA	1500
TTGGTTAAGT CAGATAAATA GATTGGCTTA ATTTGCCCAA GTTCCATATC AATGAATTTT	1560
CGTCGAATCG AAGGTGCTCC TTTAATTAGT TGTAATCTT CAGGAGCAAA TAAGACAACA	1620
TTTCATGTGTC CTACATAATC TGAAAGGCGT GCC	1653

(2) INFORMATION FOR SEQ ID NO: 330:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1340 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 330:

GAAACACTGT ATTTCAAAGC ATTTTTTGT AGTTTAAAT TACTCCCAT CTTCTTTTCC	60
AAACGTACAA TATATCCAAA ACCATTCAA ATACTAGATT CTATTTTTTA TAATATCACT	120
AAATCCACCT AATTATAGGA CGTTTTCAGA TTTTATAGTCC CAGTCCCAGT ACCGGAGAAA	180
TATTGTTTTA ATATAATATC TCTTTTGTG TTCTAAGCTC TTAAGCAAA AAGAACAAGT	240
AAAGAGTCAA GACAAGGATA AAAAGTCCAT ATTAGGGCAA ATAAAAAGCT TTAAGACAGA	300
TGACAAATCT AAGTCAAATA AGAAAGACCA TAGCAAAGGT GCAGAGAGAT AAATATTGGC	360
GGTCTTCGGA CTGCCTTTAT TTTTATATCC ATTTTCAA TCAAATTTAT TCAGACTATA	420
TATGCACATA TACACTTAAA TTCATATAAA AACATGGCTT GTAAAAAATT ACTTTAATCA	480
CAATAATCGC ATTTAAAAAT GTGATGTTTG CAAGCTAAAT TACGGACTTC ACTTGAAGT	540
TTTCCCTTGT ATCTTTTATA ATAGATAGAA AATTGCTGG CAGATGAATA TCCAACAGAT	600
TCTGCTATCT CTTTATAGG TAGTTCAGTG TTTAAAGAA GAGTTTCAGC TACATTCATT	660

1355

CTTTTCTTT GAGTGACTC TGTAATGCTT TGACAATATT TTTCCTTAAA TAAATTTTTT	720
AATTTAGTAC CACTCATTTT AGATATTTTT TCAAGCGTGC CTTGATTAC ATTCGTTGCA	780
AAATGATCAT CTAAGAATCT TGCTACATCT TCAAGTGCTT TATCATCATC AATTTC AATT	840
TTATATTTTT TTCTATTAA GTATGTGTCA ATTACTATAC TTATCCATT C ATTTGCCTTT	900
GCTTTAAAGA AAAAATCAGC GGCAGGAGCG TCCATCTTAC AATTTAATAT TTCCATTGCC	960
ACTCTTTCTA AGGCCTTTGT AAGTATTATT TGATTGCGTT GAAGCAAGGT TGAATAAAAA	1020
GATTCTGGAT TAATGTTAAT AGATGCTAAA TGTTTTTCTA TTAGCTCTTT TTTAAAACm	1080
ATGGAAACAG CAAGATAACA ACAATTCTCG TGTAATAAAA AAACAAAATT ATCTTTTATA	1140
TTATCAAAAT CAAAAGTACA TAGAGAGTTT GCGGTAATAG TTTGATACGG ATTAACTTT	1200
TCTCCGTTTG CACTGACAAT GTAACCTGAA TAAATGAAA CATAGTCTGA CATACTATAA	1260
GTGCTATTTT GAACTACTTC CTCTTTGATA TAAAAATCAT GTATATCGAT AATGAAGATG	1320
CCTCCTTCAT AAAACCGGTA	1340

(2) INFORMATION FOR SEQ ID NO: 331:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 607 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 331:

TATGTTTCGTG ATGAGTTTTT AAGTAGGAAA AACGTGCTAA CCTCTCAGAT TTTGGAAC TT	60
GTAAAAGAAA CTCTTTTTTC ACCCGTAGTA GTTGATAATG GGTTTGATCC GGCCTTATTT	120
GAAATTGAGA AAAAACAATT GCTAGCAAGT TTAGCAGCTG ATATGGATGA TTCTTTTAT	180
TTTGCACATA AAGAATTGGA TAAATTGTTT TTTTCATGATG AACGTCTTCA ATTGGAATAT	240
AGTGATTTAC GAAATCGTAT TTTAGCTGAA ACTCCACAAA GTTCTTATTC TTGTTTCCAA	300
GAATTTT TAG CCAATGATCG AATAGATTTC TTTTTCCTAG GTGATTTTAA TGAGGTTGAA	360
ATTCAAAATG TATTAGAATC ATTTGGCTTT AAAGGTCGAA AAGGAGATGT GAAGGTT CAG	420
TATTGTCAAC CTTATTCTAA TATCCTTCAG GAAGGTATGG TTCGGAAAAA TGTGGGACAA	480
TCCATTTTGG AATTAGGTTA TCATTACTGT TCTAAATATG GTGATGAGCA ACATTTACCC	540
ATGGATTGAA TGAATGGTTT ACTTGGTGGA TTTGCTCACT CTAAGCTCTT TACAAATGTC	600
CGGGAAA	607

1356

(2) INFORMATION FOR SEQ ID NO: 332:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 900 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 332:

TTAAAATACC GAATTTTGTT TTGTCCTCTA TTTCAACATT GTGAATCGCC TCAGGCAGAG	60
AACCGATACT AAAGATATAA CCAAATAGT TGTCAATTGC TTTACCGATA TCAATCTTAT	120
TGGTTAAATC AAAATCCAGT TCGTCAATG CGCCATCGAT GTCTTGATTG ATTTCCAAAA	180
GTTTTGTAAT GAGGTACCC GTACCGCCTG GGATAATCCC TAACCTAGGA ATGTAGTCTC	240
TCTCATCAAT ACCTGAAATG ACTTCATTGA CAGTTCATC TCCACCAAAC ACAACCACTG	300
CATCATACTG CTCACGAGAA GCTTCTTCAG CAAAATGTGT TGCATCCAGC GCTTTTTCGG	360
TAATTTTGGT TTCAACATAT TCAAAGTATT CTTTGTCTTT ATTCTCCAGC TTTTCTTTGT	420
AATCCAAAGC CTTCTCGCCA CCAGAAGTAG GGTGATAAT TACCATTGCT TTTTTCATTG	480
ATTTTATCCT TAATTTTAAA CAGAAATGTT TACATTTCGT CGTATGCAAG TAAATGTAAT	540
CCTATTATAC AATGAAAATA CAGAAAAGAG AAATCTGACG TACTGGAGAT TAATACGCTT	600
TTATTTCTATT TTCCCATCGC CTAACATCAT CCTTTAAGGG TTCATCCAAG TAAGAATAGG	660
CCTTATCCTT GATCCAATCA GGAATACCGT AAGCTGCCTC TGCTAwGCTA CAAGTGATTG	720
CTGCGAGAGT ATCACTGTCG CCACCAAGTG AGATGGCATT TCTTATCGCA TCTTCGAAGT	780
CTCTACTTTC AAGAAAGGCG ATAATGGCTT GAGGGACAGT TTCCTGACAT GTTTCGTTAA	840
AACGATAGTT AGGACGGATT TCATCTAAAG TTTGAGATAG ATTGTAATCG TATTCTTTTTT	900

(2) INFORMATION FOR SEQ ID NO: 333:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 533 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 333:

CCTTTCTGGC AACTGGTCT TGGAAATACGG CAAAACCTCT GAAAATATCT ATGCTGGAAT	60
GGACGAGGAA TACCGTCGTT ATCAGCCTGC CATCATCACT TGGTACGAAA CAGCCAAACA	120
TGCTTTTGAT CGCGGACAGA TTGGCAAAAT ATGGGTGGAA TCGAAAACGA CCTCAAGGGC	180

1357

GGTCTCTACA GCTTTAAATC CAAGTTCAAT CCGACCATTG AGGAATTCGC TGGTGAGTTC	240
AACCTGCCAA CTAATCCTCT TTACCACCTC TCCAATCTGG CCTACACTCT CAGAAAGAAA	300
CTGCGCAGaA GcATTAACAG AAAGGAAGCC TATGACCTTT AAACCTCTCA GCCAAGAAGA	360
ATTCATCCAG CATACCTCAG CTAGATCCCA ACGCTCTTTT ATGCAGACCG TAGAAATGGC	420
AGAGCTGCTG AGCAAGCGTG GCTTCAGTAC CCAGTATGTC GGCTACACTG ACCCACAAGG	480
GAAGGTAGTG GTGTCAGCTG TCCTCTACAG CATGCCTATG ACTGGTGGCC TTC	533

(2) INFORMATION FOR SEQ ID NO: 334:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 544 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 334:

CCAGCAAACCT AGGAAGCTAG CCGTAGTTGC TCAAAGCACA GCTTTGAGGT TGTAATAAG	60
ACTGACGAAG TCATGTACAA AACACTGTTT TGAGGTTGCA GATAGAACTG ACGAAGTCAC	120
TCAAAACACT GTTTTGAGGT TGCAGATAGA ACTGACGAAG TCACTCAAAA CACTGTTTTG	180
AGGTTGCAGA TAGAACTGAC GAAGTCanna ACCACACCTA CGGCAAAGTG AATCTGAAGT	240
GGTTTGAAGA GAGTACAACT TGTCTTTTAG AAAAGGAGCC TATAATGAAA GTCTTTCAGC	300
ATGTAAATAT CGTGACTTGT GATCAAGATT TCCATGTTTA TCTTGATGGA ATCTTAGCAG	360
TCAAGGATTC TCAATCGTC TATGTCGGTC AAGATAAGCC AGCGTTTTTA GAGCAAGCTG	420
AGCAGATTAT AGACTATCAG GGAGCTTGGA TTATGCCTGG TTTGGTCAAT TGTACACCCC	480
ATTCTGCAAT GACAGGCTG AGAGGGATCC GAGATGACAG CAATCTCCAT GAATGGCTCA	540
ATGA	544

(2) INFORMATION FOR SEQ ID NO: 335:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 349 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 335:

CCAGGAACTC AAATGTAAGT AGGGGTCCT TTTTGTATA TTTTCAAAT AACGCCTCTA	60
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1358

CACTATTTGT AGCAAATTCA CCAACTACAG TTGTATCTTA GTTAAATATA GTTAGAATAT	120
GTAAGTGAGT ACCAGATATA CCAAGACATC GTCACCATCT AAGGTATATT CAAAATACAA	180
AAGTTGACCA ACTAGATTTC TGAATATCCT TATATATCCA TTCTTAAAAT TGGTTTAAAT	240
AGCGTAGTCT TTTAACTAG TTTTGAGAAT CCAAAAAATC TTCCTACATA TGTAAGAAGA	300
TTTTTTAGTT CAGAATGATT AGATTTAGCT AATGGATACC TATCCTACC	349

(2) INFORMATION FOR SEQ ID NO: 336:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1206 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 336:

CTCCGATAAC CACACCAGCA ATGGAATATA TTCCATCGTT AGCATCAAGA ACACCCGCAC	60
GCAGGATATT TAAACGACCT GCAAAATTTG AATCAATTC GTGATTTGTT TCTGACGCTA	120
AATTTCAAGT TCAAGTTAGC CATCAAGAAG TCTTCTCTGG GTGACTTGTA GTCCAAGCAT	180
TTTTTAGGAT AGTTGTTAAT CCACTTTTCG ATGAATGCGA CTTCTTTGGG AGTCATTTTC	240
TTGGTTCCCT TAGGTAACCA TCTACGAATG AGCCTGTTGT GATTCTCATT AGTTCCCGGG	300
ATCCTCTAGA GTCGACCTGC AGGCATGCAA GCTTGGCACT GGCCGTCGTT TTACAACGTC	360
GATGACTGGG GAAAACCTG GCGTTACCCA ACTTAATCGC CTTGCAGCAC ATCCCCCTTT	420
CGCCAGCTGG CGTAATAGCG AAGAGGCCCG CACCGATCGC CCTTCCCAAC AGTTGCGCAG	480
CCTGAATGCG GAATGGGGCC TGATGCGGTA TTTTCTCCTT ACGCATCTGT GCGGTATTTT	540
ACACCGCATA TGGTGCACTC TCAGTACAAT CTGCTCTGAT GCCGCATAGT TAAGCCAGCC	600
CCGACACCCG CCAACACCCG CTGACGCGCC CTGACGGGCT TGTCTGCTCC CGGCATCCGC	660
TTACAGACAA GCTGTGACCG TCTCCGGGAG CTGCATGTGT CAGAAGTTTT CACCGTCA/C	720
ACCGAAACGC GCGAAACGAA AGGGCCTCGT GATACGCCTA TTTTATAGG TTAATGTCAT	780
GATAAGGATG GTTCTTAGA CGTCAAGTGG CACTTATCGG GGAAATGTGC GCCGAGACCC	840
TATTTGTTTA TTTGTCTAAA TACATTCAAA TATGTATCCG CTCGTGAGAA AATAAACCTG	900
ATAAATGCGT CAATAATATT GAAAAATGAA GAGTATGAGT ATTCTACATT TCCGTGTCGC	960
CCTTATACCC TTTTGTGCGG CATGTTGCCT TCCTGTTTTT GTCACCCAG AAAACGCTGG	1020
TGAAAGTTTA AGATGCTGAA AAATCATTTG GGTGCACAAC TGGGGTTACA TCCAACCTGA	1080
ATCTCCAnCA GCAGTTAAGA TCCTCTGACA GTTGACACG CCGCAAGAAC TATTTCCGAT	1140

1359

GAATGAGCAA CTTTAAAAG TCCTGCGAAT GTTGGGGCGG TAATAATCCC CGTGTGTAG 1200
 GCCCCG 1206

(2) INFORMATION FOR SEQ ID NO: 337:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 813 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 337:

CTGCTCAACT CAGACAGTCA AATTCTGAC TTTACCAAAA GAACCATCAA AAAAGTTGCT 60
 GAAAAAGGCC ATCAGGTTAT TATTACGACA GGTGCGCCCTT ACCGTATGTC AAAAGATTTT 120
 TACCGTGAAC TGGGCTTAGA CACTCCTATG ATTAAGTTCA ACGGATCCCT TACTCATTTA 180
 CCAGACCAAG TTTGGGATTT TGAAAAGTGT TTGACTGTAG ACAAAAATA TCTGCTAGAT 240
 ATGGTTCAAC GTTCAGAGGA CATTCAAGCC GATTTTATCG CTGGAGAATA TCGTAAAAA 300
 TTCTACATTA CAAATCCCAA TGAAGAAATT GCCAATCCCA AACTATTTGG TGTAGAAGCT 360
 TTCCAGCCTG AAGATCAATT CCAGCCTGAA TTGGTGACCA AGGACCCTAA CTGTATCCTC 420
 TTGCAGACTA GAGCCAGTGA CAAATATTCC TTGGCAAAAG AAATGAACGC CTTCTACCAG 480
 CATCAACTTT CTATCAATAC CTGGGGAGGT CCGCTCAATA TCCTTGAATG TACCCCAAAA 540
 GGTGTCAACA AGGCCTTTGC TTTGGACTAC TTGCTCAAGA TAATGAATCG TGACAAAAA 600
 GATTTGATTG CCTTTGGAGA TGAACACAAT GATACCGAAA TGCTCGCTTT TGCTGGGAAG 660
 GGTTATGCCA TGAAAAATGC CAATCCAGAG CTACTCCCTT ATGCAGATGA GCAAATTTCC 720
 CTTACCAACG ACCAAGATGG GGTGCGCAAA ACCCTACAAG ACTTATTCTT ATAACCTATA 780
 CTGATACTCA ATGAGGGGCA AAGAGCGAAC TTA 813

(2) INFORMATION FOR SEQ ID NO: 338:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 683 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 338:

CCTAGATAAA TGATATAATT CTATTATTGT TCGTAAAAAT TAAAAGGAGA TTGATGATGG 60

1360

ACAAATTATT TAAACTAAAA GAGAACGGTA CAGACGTTTCG TACAGAGGTT CTCGCTGGTT	120
TAACAACTTT CTTTGCAATG AGCTATATTC TCTTTGTAAA CCCACAAATA CTTTCACAAA	180
CAGGAATGCC TGCTCAGGGC GTCTTCCTAG CGACGATTAT TGGTGCAGTA GCGGGTACCT	240
TGATGATGGC TTTTATGCT AACTTACCTT ATGCCCAAGC GCCAGGTATG GGA CTCAATG	300
CCTTCTTTAC CTTTACAGTT GTATTCGGGC TTGGTTATTC TTGGCAAGAA GCCCTAGCTA	360
TGGTCTTCAT CTGTGGGATT ATTTTATGTA TTATTACCTT GACAAATGTT CGTAAAATGA	420
TCATTGAATC GATTCCTCAAT GCTCTTCGCT CAGCTATTTT AGCTGGTATC GGTGTCTTCC	480
TTGCCATGT AGGGATTAAG AATGCTGGAC TTTTGAAATT CACGATTGAT CCAGGCAACT	540
ATACTGTTGT AGGAGAAGGG GCTGACAAAG CTAAGCAAC GATTGCAGCA AACTCTTCAG	600
CAGTTCAGG ATTGGTCAGC TTTAATAATC CAGCTGTTTT AGTGGCTCTT GCAGGACTTG	660
CCATTACTAT CTTCTTTGTC ATC	683

(2) INFORMATION FOR SEQ ID NO: 339:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 852 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 339:

CTACTTTACA TGGAAGTAGT CACTGAATTC CAGTTAGAAA TTACTTTGTA ACTACGTTTT	60
GAGGAGGAGT AAAATGCTTT CCTACGTCG ATATTACCCA CTAGCGATAG CTAAATTAAT	120
GTGCTGTGC TCTCCTAAAA TCTGCTGATT TATTACTGAC TAATACAGGA GGTTTTTTTT	180
ATGgACAGAC AATCATATCT GCTATTGGTG TTTATATTTT CACCAGTATC GATTATTTAA	240
TTATTTTAAAT TATTTTATTT GCACAGCTAT CACAGAATAA ACAGAAATGG CATATTTATG	300
CGGGGCAATA TCTAGGCACA GGCTTACTTG TAGGGGCGAG TTTAGTTGCT GCTTATGTCG	360
TTAATTTTCT GCCTGAAGAA TGGATGGTTG GATTGCTTGG TTTAATCCCT ATCTATTTAG	420
GGATTTCGCTT TGCAATTGTT GGAGAAGATG CGGAAGAAGA AGAGGAAGAA ATTATTGAAA	480
GATTAGAACA AAGCAAGGCA AATCAACTGT TTTGGACAGT TACATTGCTG ACAATTGCGT	540
CTGGCGGAGA TAATTTAGGT ATCTATATAC CTTATTTTGC TTCGTTAGAT TGGTCACAGA	600
CCCTCGTGGC CTTGCTTGTG TTTGTAATCG GCATAATTAT CTTTTCGAG ATTAGTCGGG	660
TGTTATCCTC TATTCGTTA ATATTCGAGA CAATTGAAAA ATACGAGCGA ATCATTGTGC	720
CCTTAGTATT CATTCTACTT GGACTATACA TCATGTATGA AAATGGCACG ATAGAGACTT	780

1361

TTCTGATCGT GTAGATTTTT TTGTTTCACT AGGGATTAG CCCGAGCTCA AATCAGCTCT 840
 CTGATTTTCA GA 852

(2) INFORMATION FOR SEQ ID NO: 340:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 754 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 340:

CCGCACAAAA GCGCATAGTA TCAAGATTCT ATAAAGCCTT GATACTATGC CTTTTTAATG 60
 GATAAATAGT TAGTCTTTTT TAAAGACCGG ATCTTTCAAA CTCTGCATAC TGGCATTGAT 120
 CACCGCGCCT AGGATAACAA TTTTAGCAAT CAAGATAAAC CAAAACATCA TAACAACAAG 180
 AAGAACGGAA CCTAAATTC GGACATCCAC CAAATGATGG ACATAGTAAT TGAGATAACT 240
 AGAGAACAGA GTTAGTAAAC CTAAATCAC TAAGAGAACA AAGGCACTGC CTGGTAGGGT 300
 ATAGCTAATT TTCCTGTTAG ATAGATTGGG AAGAAAATAA TAAAGCATGA CCAAGATAGC 360
 AAAGAGGAGG GCGTAAATCA GAGGACCTGC CAACCCTTGT AAAGCCTGAT AGATAATGCC 420
 ATCTTTTGTC CAATAATGAG CAAGTAAAGC CAAATCATC TGACCAAATA AGATCAAAAA 480
 CAAGGCAAAC GCAAAGAGGA GCTGCAACCA AAAGTACTA GGAGACTTAG CATCTGATGG 540
 GAAATAAGTC CACGACTCTT TTCGACGCCA TAAGCCTTGT TAAAAGCTTT TTGCAAGAAA 600
 TTCATAGATT TTGAAAACT CCATAACGCC GATAAACAG AAAAACTCAA TAAACCTGTT 660
 GAAGGTGCG TCAAGACTTC TCTGGCTATT TTTCCACAC CTTCATAGAG GCTTGGGGGG 720
 CAGACGTCTT TCATAAAGCC CAAAAATTCT CCA 754

(2) INFORMATION FOR SEQ ID NO: 341:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 707 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 341:

GGGGATAACT CTAGGAGTAC CGCTATTACT CGACTTAATG AGTGCACAAG AAGTCAGGAT 60
 TTTTATGCAG GTTGGGCGCT TCATCAGACA GGGAAGATTT ACAGCGACTA TTATGGAAGT 120

1362

CAAGGTTTGC TTTATTATTT GCTGACTTAC GTGAGTCAGG GCGGATTTTT CTTTGCCATC	180
TTTGAGTGGT TAGCCTTGGT AGCAGGAGGA TTTTTCCTTT TTAGATCAGC GGACACCTTG	240
ACAGAGCAAG GAGACCAAGC TGGACATCTG GTGACTATTT TTTACATGCT AGTTACAGGT	300
CTTGCTTTTG GTGGAGGCTA TGGGACTCTT TTAGCGCTTC CTTTCTTATT CGCAGCCTTT	360
AGTTTAGTTG CGGCTTACCT AAGCAATCCA AGCCATGATA AGGGATTTGT ACGGATTGGG	420
CTAGCTTTGG CAGGCGGATT TTTCTTTGCT CCCTTATCAT CGCTCCTGTT TATTGCTGTA	480
GTGAGTTTAG GCTTGTGGT CTTTAACCTT GGCATAGAC GCTTTGCGCA TGGGTTTTAT	540
CAGTTTCTTG CAGTGGCTTT AGGTTTTTCA CTGTCTTTT ATCCAAGTGC CTACTATAGT	600
GCTGCAACAG GAAGTTTTGG GGATGCGWTT AGTGGTATTC GTTATCCTAT TGACAGTATT	660
CGCTTTGATT TTAATTCTAA AATTTTAGAG AATATGTTTT TTTAAGG	707

(2) INFORMATION FOR SEQ ID NO: 342:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 762 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 342:

GGATTTTGAA AAACCATACC GATTTGACGA CGTATATTCC AAACATTTTC CTCAGTCAAA	60
CGTTGGCCAT CAATTACAAT CTCTCCGGAT TCTGCTTCCA GTAAGCCATC AATTAATCGA	120
ACCGTCGTTG ATTTACCACT ACCATTATGC CCTACAATCG AAAGCCATTC TCCACGTTTC	180
ACGTGAAAgT AATATCCTTC ACATCGTAGT AGTTCGTATT TTCTTTATAG CGAAAAGAAA	240
GATTTTTTAC ATCAATTATT GATTTTCAATT CGAACCAAAT GTCCCTTTAA ATACATAGGC	300
ACTACCCTTG AAATAGTCAT AGCCAGAGTA GATAGTGAAA AATAAGGCTA CATAAAGTAG	360
AACTTGACCA AGCAAAGTCC AATGTAATAG CAAGAAAATA ATGGCAAACA TCTGACTAAA	420
AGTTTAAATT TTTCCAGGCA TTGCTGCTGC TAAAATTGTT CCACCAGTTT CAACCAATAA	480
AAGCCTTAAA CCTGTCACAG CTAATCAGC ACAGATAATC ACTGCAACAA TCCAAGCCGG	540
AGCCATACCT AACTCAATCA ACATAATAAA AGCCGACATA ACTAGTAACT TATCCGCCAT	600
AGGATCTGCA AATTACCAA AATTACTGAC CACATTCAT TTACGAGCTA AATATCCATC	660
TAAATAGTCG GTAATACTGG CAACAGCAAA GATAATAGCT GCAACTATAT GACTCTCTAT	720
CGAATTCCT ATCGTTAAAA TAAAGATAAA AATAGGTATA AA	762

(2) INFORMATION FOR SEQ ID NO: 343:

1363

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 482 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 343:

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CTTTTGATAC ACTTAACTA TGAATACAAA TCTCAAGCCC AAAC TTCAGC GTTTTGCTTC      60
TGCGACTGCC TTGCGCTGTC CTATCTGTCA AGAAAATCTG ACTCTGTTAG AGACTAATTT      120
CAAGTGCTGC AACCGTCATT CTTTGTGACTT GCGGAAATTT GGCTATGTCA ATCTAGTCCC      180
TCAAATCAAG CAATCTGCTA ACTACGACAA GGAAAATTTT CAAAACCGTC AACAAATCCT      240
AGAAGCCGGC TTTTACCAAG CTATCTTAGA TGCTGTATCT GACTTGCTTG CAAGCTCAAA      300
AACTACCACA ACAATTTTGG ATATCGGTTG TGGTGAAGGA TTCTATTCTC GCAAAC TACA      360
AGAAAGTCAC TCTGAAAAA CTTTCTATGC CTTTGACATC TCCAAAGATT CAGTCCAAAT      420
CGCGGCTAAA AGTGAACCCA ACTGGGCAGT CAATTGGTTC GTTGGCGACT TGGCAGGACT      480
TC                                                                           482

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(2) INFORMATION FOR SEQ ID NO: 344:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 520 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 344:

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TTTATTTTAA TAAAGTCAAT ACCTGTCTTT ACTTTTCTT AAAAAAGTT TATTATGTTC      60
TTTAAGGAGG TGTAACAT GAAAATAAAT AATAAATCG TTGGAGAACG TATTCAAAAT      120
ATCCGTTTAA GCCATGGCGA CTCTATGGAA AAATTTGGAG AAAAATTTAA TACTAGCAAA      180
GGTACAGTTA ACAACTGGGA AAAAGGTCGC AATTTACCAA ATAAAGAAAA CCTACTAAAA      240
ATTGCATCTA TTGGAAAAAT GAGTGTGAA GAGTTACTCT ACGGCGATTA CAATACTTAT      300
CTACACTTAA AGATTATGGA TTTAGCTCCT GAATGTATAA AAAATTATGA TGAGTATAAC      360
TCTTTACAG ATGATATAAC AAATAAGCG TTACAGATCG CTCAAATAC CATTTCTAAG      420
ATTGATTATC AAATTTTACA CGAACGATC AAAAAATTTA TTGATTTAGC TATCGAACAA      480
TCGAGAGATT TGCAAGGAAA TTTGTTGAAA AATAACGGGT                               520

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1364

(2) INFORMATION FOR SEQ ID NO: 345:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1003 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 345:

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GCATCAAATC CGCCATCAAA GAAGTTCTCT GGATTACCA AGACCAGTCA AATAGCTTAG      60
AAGTGCTTAA TGACAAGTAC AATGTTCACT ACTGGAATGA CTGGGAAGTT GGAGACACGG      120
GAACCATTGG TGAGCGCTAT GGTGCCGTTG TTAAGAAACA CGACATTATC AATAAGCTTC      180
TCAAACAGTT GGAAACCAAT CCTTGGAACC GCCGCAATAT TATTTGCTC TGGGATTACC      240
AAGCTTTTGA AGAAACAGAT GGGCTGCTCC CGTGCGCCTT TCAGACCATG TTTGATGTTT      300
GGCGTGTGTA TGGGGAAATC TATCTGGATG CGACCTTGAC CCAGCGCTCC AATGATATGC      360
TGGTGGCCCA CCACATCAAC GCTATGCAGT ATGTGGCTTT GCAGATGATG ATTGCCAAAC      420
ATTTTGGCTG GAAGGTTGGG AAGTTCTTCT ACTTCATCAA CAACCTCCAT ATCTATGATA      480
ATCAATTGTA ACAAGCTCAG GAATTGCTCC GTCGGGAGCC GTCAAAGTGC CAACCACGCT      540
TGTTTAAAAA TGTTCCGTAT GGGACTAATT TCTTTGATAT CAAAGCAGAA GATTTTGAGT      600
TGGTGGATTA TGACCCTGTT AAGCCACAGT TGAAGTTTGA CCTAGCTATT TAAAAGAATA      660
GAAAAAAGAA GTTGAGAATA ATCCCAACTT CTTTGTGTTT TTAACGTGAT ACGCGGCGAC      720
GAGCTGCTTT TTTACGTTT TCTTCGATGA AAGCTGCTTT TTGCTCTTCT GTTTCGATTA      780
CTTCTTTTTT AAATGCGTAT ACTGCACCTG CAACGGCAGC GACAGTTCCT GCGACACCTG      840
TTACAAGACC TTTAGCGAAT CCTTTAGCCA TGAGTCTTCC TCCTTTATAT TCTCAATCAG      900
CCAGCCTCCT CAAGAGGTCA CATTTTCTG ACTGACCTTT TTGTGTTATA ATAATAGTAA      960
CGAAAAAATG GGAATTTTTC AAGGAAAAAA GATGAGAACA AAA                      1003

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(2) INFORMATION FOR SEQ ID NO: 346:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 750 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 346:

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CCGCACGTAC TATTCCAGAT GCCGAGGAAG TGGACCTCAT CCTCGTTGGC GCAACTGGTC      60

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1365

TCAACGCCTT TGAACGCCTC TTGGTCGGCT CTTCTCTGA ATACATACTC CGCCATGCTA	120
AGGTCGATTT GCTGGTTGTG AGAGAACAAG AAAAAACCTT ATAATCACAA AGAAAAGGAG	180
CCCCTAGCTC CTTTTGTTT ACGATTATT TCTCTCTTA TGGCGTTCGT AAGCCTTGAG	240
CTGGCGCTGC AGTTCCTTTT TAATAGCAGG TTCTGGAGCA TATTTTCTT CCCAATTATC	300
TGGTTTAAAG ATTTTATGGG TCACTGGATC AAAATGAGCC TTGCCATCTG GAAAAATTTT	360
CCCCATATTG GCCTGATGGA CAATATCAAA AATACGTTCT GGGTCCACCC CCATCAAGAC	420
AAAACGCGG TAGGTGAAGT AAAGCGTGC AATCAAGGCA TCCACTTGCC CTATCAAATC	480
TTGCTGAGCA GGTGTCTTCT TGGCTACTTT ATCTGCTGCC TTATCAAGGG CCTGATGAAG	540
TTGCGATACA GCTTGACCAA AATCTTCTTC AGAAGGACTG GCTGCTCGAA CAACTCCAC	600
CAATTCTTCT ATTTTAAAC CAGCCCTATG GGTGCACCC TCTAAATCCC AAGCTCGAGG	660
TTCTTCTTGG GTTCGTTTCT CCATCATGTG GTGGAAAGTC TTGACCTTAT TGAAATGATA	720
GTCACGGCTG ACAAAGACTT TTTCTGAAGA	750

(2) INFORMATION FOR SEQ ID NO: 347:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 596 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 347:

CGCAACATAC GGATAACCTC CAAAGAATAT TTTTATATTA TAGCAAAGCT TTAAATTGAA	60
TGTTAGAGTC TTGTTCAAAA CAATCATCAA AACCACGTGG ATGATGGTAT TCTACTAAGT	120
GTTGATCTTG AGGATAAGTG TACTTACCGC CAACTTCCCA GATAAATGGA TGGAAATCGT	180
ATTGCAAGCG ATCTTTTCGC ATTTTCCAAA GTTCTAGAAT CTCATTAGTA GAAGCCATGA	240
AGTTAGACCA GATATCATAG TGAAGTGGGA TAATGACTTT GGTACGCAGA TTTTCTGCCA	300
TACGAAGAAG GTCGATAGAT GTCakTTTGT CTTGGATACC TACCGGATTT TCACCATAGT	360
TATTCAAAGC AACATCAATT TTAAAGTCTT TACCATGTTT TGCAAAATAG TTTGAGAAGT	420
GAGAATCTGC ACCATGATAG ATGGTTCCAC CTGGTGTTC AAAGATATAG TTAACAGCCT	480
TTTGAGCCAT TTCTTCATCT GTAACAGCCA AGCCAGCAgT TCACCGCCTG TCTCATCAGC	540
ACCGTTCACT GGGAGAGTTA CCAAGCAAGT ACGGTCAAAT GATTCTACTG CATGAA	596

(2) INFORMATION FOR SEQ ID NO: 348:

1366

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 673 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 348:

CAGAGTCAAC AGCCTGAGTT GAAGGCAACT TTAGACACAG CAGTTACGAC AGCTGAATGA	60
GCTCCTCCAT CAGTTTTTTC TTAAATGAGT CCAGCTACAT CTTCAACTTC GAGGCCGTTA	120
ATCACAATGT CAGCGCCTAC TTCTTTTGCA AGGGCAAGTT TGTCATTGTT GATATCGACT	180
GCGATAACAT GAGCATTGAA TACTTTTTTA GCGTATTGAA CAGCGAGGTT ACCAAGTCCA	240
CCAGCACCGT AAAGAACAAC CCATTGGCCT GGTTCAACTT TTGCTTCTTT GATAGCTTTA	300
TAGGTTGTTA CTCCAGCACA TGTGATAGAA GAAGCTTGGG CTGGATCAAG TCCGTCAGGA	360
ACTTTGACAG CATAGTCAGC AGTTACGATA CATTGTTTAC CCATACCACC GTCTACTGAG	420
TAGCCAGCAT TTTTCACTGT ACGGCAAAGG GTTTCGCGAC CAGTTGTACA GTATTGCGAA	480
GTGCCACATC CTTCAAAGAA CCAAGCAACG CTGACGCGGT CACCGACTTT AAGGCTTTTC	540
ACATCTGGAG CAATCTCTTT AACGATACCG ATACCTTCGT GCCCAAGAAC ACGTCCTGGG	600
ACTTGACCAA AGTCACCATG AGCAACGTGG AGGTCGGTGT GGCAAACGCC CACAGTATTC	660
ACTTCTACAA GTG	673

(2) INFORMATION FOR SEQ ID NO: 349:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 198 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 349:

GTACCCTACA AATGCTTTAC AGTATGGGTT GAGGGTGGTC AATGGAACTA TGGAGTAGGT	60
TGGACAGGAA CTTTGGGATA TTCTGATTAC TTACATTCTA CTCGATATCA TACAGCAACT	120
GTTAGACATG GGGGTAGAAC CTCTAAGGAT TATGCAAAAC CTGAGGCATG GGCTAGAGCT	180
TCCCTCACCA AGATTCCG	198

(2) INFORMATION FOR SEQ ID NO: 350:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 891 base pairs
 (B) TYPE: nucleic acid

1367

(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 350:

GCTTCTTCTA TAGACAAAAA TATCATGGGT AAAATAATCA AGGCTATAGC TAGAAGGAGG	60
GACCAATCCA CTACTAATCC TAAGAACAAA AACTCAAGA GAGCAGAAGA GAGAGGTCA	120
CTGGCACTGA TAACGGCAAC CACCAAAGGA GAAACCAAGG ACACAGCCTT CATGGAAATG	180
AAAAAAGCAA AAGCCGTTCC AAAGAAAGCG ATAATGAGGC AAATCAAGAT ACTCCAAATA	240
TCAAGAGTAA AGGAAAGCTG ATAAACCGGC GAGAGGACAT TGCTAAACAA ACCTGCCAAA	300
ATCATCCCCC ACCCAACCGT AGGAACAAAA CCATAACGCT TAGCAAAAGG TTGGGGCAAG	360
ATAACATTAA ACATAACACC CATGGCACTC AGCAAACTG TTATAAGAGC TAGCGGCGTC	420
ATGGATAACT GAGAGAGGTC TCCCTTTGTC GCCATCAAGC AAACACCCAG CATGGCAACC	480
AAAACATAGA AAACAGCGCT TTTTGACGCT CGTTTTTGAT AAACCAAGCG ATTGTAAAAG	540
AGGATAAAGA CAGGGCTAAT AAAGTGTAAA ATAGTTGCTG TCGTAGCATT TGAGTATTCT	600
ACACAGAGAT AGAAAAATA CTGAACTGAA AAAATCCCCA AAATAGCATA GGCTAAAAAG	660
GGCAGGTAAT TTTTCTTGTC TCGCCAAATA TCTAGCACTT GCGATTTTAA TTGTATTGCA	720
GACCAATGA GTACAAGACT CCCTGCCAGT GTCAAACGCA TAGAGGTAAT CCAGCCCGAA	780
GACACCTGAT AATGAGTAAA GAAGTACTCT CCTAAAATTC CACAGATTCC CCATATTAAG	840
CCGGATAGGA GCGAATAAAT TTTTCCGTTA ACAATCTTTT TCTGATACTG A	891

(2) INFORMATION FOR SEQ ID NO: 351:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 325 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 351:

GAAAGCGTTC AATAGAACAT TGCTTTTTTA TTTTATAGT AAGCTAAGCG CTTCAGCATC	60
TGCGATGATG GTTACATCAG GGTGATTTTG GAGGCTACTT GCAGGTAGGT TCTCAGTCAC	120
TGGGCCAGAT ACTGTTCCGG CAATGGCTTC TGCTTTTCGAC TCACCGTAAG CAAAAAGAAT	180
AATAGACTTG GCATCCAAAA TGTTTTTAAT CCCCATTGAA ATAGCTTGGG TTGGGACGTC	240
TTCAATCTTG GCAAAGAAGC GTGCATTGGC TTCGATAGTA GACTGGTCAA GTTCTACTAG	300

1368

ATGCGTTTGA CTGTCAAATG GAGTG

325

(2) INFORMATION FOR SEQ ID NO: 352:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 344 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 352:

CAAGAGCAGT TTGATGATTT TTGATAAGCA TGCGAATTTA AAATACAAAT ATGGCAATCG	60
CAAGTTTTGG TGTAGAGGCT ATTATGTAGA TACGGTAGGC CGTAATCAGA AAGTGATAGC	120
TGAATATATT CAGAAATCAAT TACAAGAAGA CAGAGTAGCA GACCTAGCTC ACGTTATTCG	180
AGTCAGTAGA TCCGTTTACT GGCAGAAATAA ATAAGAGGAA GTAACGThAA GTGCTTTAGC	240
ACCTGCTCGG GAAAGTGGTG CGCGAGGAAG CTATTTTCAGG ATGCTTTGGC CCTGGCCGGT	300
AGAAGCGTTA TAGCCGAGCA CTACGACACT TCACACTGGT GGT	344

(2) INFORMATION FOR SEQ ID NO: 353:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 692 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 353:

CCCTATCCCT GCTATTGGGG CTGCTCTCAT TGCTGCTTTG GCACAAATCA GTCTTCCAAT	60
TGGACCTGTT CCCTTCACTC TGCAAACTT TGCAATCGGC TTGATTCTAC TGTCTTTAGA	120
CCGAGAGAGG CTGTACTTTC TGCTGGACTC TATCTTCTTC TAGGTGCTAT CGGTCTTCCT	180
GTCTTTGCAG GAGGTGGAGC TGGTTTTCAG GCTTTAGTTG GCCCTACTGC AGGCTATCTT	240
TGGTTTATC TCGTTTACTC TGGACTTACT TCCTCTCTAA CCAACAGCAA GAGTGGTGTT	300
GTAAAGATTT TTCTTGCAA CCTCTGGGT GATGCCCTTG TCTTTGTCGG CGGGATTCTC	360
AGCTTGCAAT TCCTAGCTGG AATGGCATT GAAAAAGCTC TTGCTGTGGG GGTTCTTCCC	420
TTTATCATTC CAGACCTTGG CAACTTCTA GCTATTAGTT TTATTAGCCG TCCCCTACTT	480
CAACGCCTTA AAAATCAGGC TTACTTTACT AACTAAAAA GGATATCGAG TTATCATGAC	540
TCAATATCCT TTTCTTTTAT TTTGAAAACT TATACTCAAT GAAATCAAA GAGCAAACTA	600
GGAAGCTAGC CGCAGGCTnG CAAAACACTG TTTTGAGGTT GTGGATGAAA CTGACGAGTA	660

1369

AnATCTCATA CATACGGCAA GGCAAAGCTG AC

692

(2) INFORMATION FOR SEQ ID NO: 354:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1005 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 354:

GTGATGGACT ACTGGTTCAA AACGCATCCA GAAGATTTTT TCGATAATGT CGGACCTCTT	60
GTAGCCAGTA ACTTTTTTCA TACTTACACC GAAGATTTC ACTTGATGAA GGAAATTGGA	120
GTTAATTCTT TCCGCACTTC CATCCAATGG AGTCGACTCA TCAAGAATTT AGAGACAGGT	180
GAGCCTGATC CAAAAGGTAT TGCTTTCTAC AATGCCATCA TTGAAGAAGC TAAAAAGAAC	240
CAGATGGATC TTGTGATGAA TTTACATCAT TTTGATTAC CAGTGGAAC TCTTCAAAA	300
TACGGTGGTT GGGAAAGCAA ACATGTAGTG GAGTTATTCG TGAAGTTGC CAAGACTGCT	360
TTACATGCT TTGGAGATAA GGTTCATTAC TGGACAACTT TCAATGAGCC AATGGTCATT	420
CCAGAAGCAG GGTACTTATA TGCTTTCCAT TATCCAAATC TAAAAGGAAA GGGAAAAGAG	480
GGCGTACAAG TCATCTATAA TCTAAACCTT GCTAGTGCAA AAGTGATTCA ACTATATCGC	540
TCATTAGAAC TTGATGGAAA GATTGGGATT ATTTTAAACT TGACACCTGC TTATCCAAGA	600
AGTAATTCTC CAGAAGACTT AGAAGCAAGT CGATTTACAG ATGACTTCTT TAACAAAGTC	660
TTCTTGAATC CAGCTGTTAA AGGAACCTTC CCAGAAAGAT TGGTAAAACA GCTAGAGAGA	720
GATGGCGTGT TATGGAGTCA TACCGAAAAA GAGCTTCAAC TGATGAAATC AAATACGGTT	780
GATTTTCTTG GAGTAAACTA CTACCATCCA AAACGTGTTT AAGCACAAGC AAATCCTGAG	840
GAATATCAGA CGCCCTGGAT GCCAGACCAA TACTTCAAAG AGTATGAATG GCTGGAGCGT	900
CGCATGAATC CATATCGTGG TTGGGAAATT TTTCCGAAAG CCATTATGA TATTGCTATG	960
ATTGTGAAGG AAGAATATGG TAATATCCCA TGGTTTATCA GTGAA	1005

(2) INFORMATION FOR SEQ ID NO: 355:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 973 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

1370

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 355:

CCGACAAGCA ATATTAAGAA GAGTAACTA TTAAC TAGTT AATTAACCGG TTTATTACTT	60
TATAGTGAAT CAAATATACT TAAGAAAAGA GGAAAGAATG AAAATTAATA AAAAATATCT	120
AGCAGGTTCA GTGGCAGTCC TTGCCCTAAG TGT TTGTTC TATGAGCTTG GACGTTACCA	180
AGCTGGTCAG GATAAGAAAG AGTCTAATCG AGTTGCTTAT ATAGATGGTG ATCAGGCTGG	240
TCAAAAGGCA GAAAACTTGA CACCAGATGA AGTCAGTAAG AGGGAGGGGA TCAACGCCGA	300
ACAAATTGTT ATCAAGATTA CGGATCAAGG TTATGTGACC TCTCATGGAG ACCATTATCA	360
TTACTATAAT GGCAAGGTTT CTTATGATGC CATCATCAGT GAAGAGCTCC TCATGAAAGA	420
TCCGAATTAT CAGTTGAAGG ATTCAGACAT TGTCAATGAA ATCAAGGGTG GTTATGTCAT	480
TAAGGTAAAC GGTAAACTACT ATGTTTACCT TAAGGATGCA GCTCATGCGG ATAATATTCTG	540
GACAAAAGAA GAGATTAAAC GTCAGAAGCA GGAACGCAGT CATAATCATA ACTCAAGAGC	600
AGATAATGCT GTTGCTGCAG CCAGAGCCCA AGGACGTTAT ACAACGGATG ATGGGTATAT	660
CTTCAATGCA TCTGATATCA TTGAGGACAC GGGTGATGCT TATATCGTTC CTCACGGCGA	720
CCATTACCAT TACATTCTTA AGAATGAGTT ATCAGCTAGC GAGTTAGCTG CTGCAGAAGC	780
CTATTGGAAT GGAAGCAGG GATCTCGTCC TTCTTCAAGT TCTAGTTATA ATGCAAATCC	840
AGCTCAACCA AGATTGTCAG AGAACCACAA TCTGACTGTC ACTCCAACCT ATCATCAAAA	900
TCAAGGGGGA AACATTTCAA GCCTTTTACG TGAATTGTAT GCTAACCTT ATCAGAACGC	960
CATGTGGGAT CTG	973

(2) INFORMATION FOR SEQ ID NO: 356:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 843 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 356:

GGTCGCATCT GCAATATCTG TCGCCTCCAC ATAAGCGACA CCAGCCTTGT CTGCTGCCCCG	60
TTTGACACGT TCTGCAGATT GACCCAGGAT GACCATCTTC TTGAGTCCAG TAATGTCTGG	120
CACCAATTCTG TCAAACTCAT TGCCACGGTC CAAACCACCT GCAATCAAGA CGACCTTGCT	180
GTGTGCAAAAT CCTGACAAGC TTTTGTAGTA GCCAAGATAT TAGTTGATTT ACTGTCGTTA	240
TAGAATTAA CACCTTGAT GTCATCCACA AACTGGAGAC GGTGTTTGAC ACCACCGAAG	300
GCTGAAAGAG TTTCTTGAT GGTGTTGATTG TCCACATCAC GAAGCTTGGC TACAGCAATA	360

1371

GTCGCAAGGG CATTTCAC ATTGTGGCTA CCTGGAACAC CGATTTCATT CGCTGCCATG	420
ACTACTTCAC CACGGAAGTA GAGTTGACCA TCTTCCAGAT AAGCTCCATC AACCTTTTCA	480
AGTGTTGAAA ATGGTACAAC AGTGGCTTCT GTCTTGAAG TCAAGTCTTT TGCCAAGTCT	540
TGATTAAAGT TCAAGACAAG GAAATCAGCT GCTGTCATCT TGTCTGGAT ATTCCACTTG	600
GCTGCTACAT ATTCCGAAAA TGACCCATGG TAGTCGATAT GAGTTGGCAT GAGGTTGGTA	660
ATAACCGCAA TCTCTGGATG GAATTCTTGA ACACCCATGA GTTGGAAAGA AGAAAGTTCC	720
ATAACAAGCG TGTCTTATC TGATGCTATT TGAGCAACCT GACTAGCTGG ATAGCCGATA	780
TTCCCTGATA AAAGACCATG TTGGCCAGCA GCAGTCAAAA CTTCCCGGGn TCCTCTAGAG	840
TCG	843

(2) INFORMATION FOR SEQ ID NO: 357:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 807 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 357:

TTTTTTTAT ATTTTTTTA TTTATTATTT TTTGGCAAAA AAGACCAATT TGCTTTGGAG	60
CATTGCTTCT GCATTAAATT GTCTATTTT GTCGTGCTG TTACGCTCTT TGTATCATGT	120
ATTAAC TAGC AAGTGCAACT TGCAAACTAC TAGTAAGAGG AGAAAAACAA AATGGTTATG	180
ACTGACCCAA TCGCAGACTT CCTAACTCGT ATTCGTAATG CTAACCAAGC TAAACACGAA	240
GTACTTGAAG TACCTGCATC AAACATCAAA AAAGGGATTG CTGAAATCCT TAAACGCGAA	300
GGTTTTGTAA AAAACGTTGA AATCATTGAA GATGACAAAC AAGGCGTCAT CCGTGTATTT	360
CTTAAATACG GACCAAATGG TGAGAAAGTT ATCACTAACT TGAAACGTGT TTCTAAACCA	420
GGACTTCGTG TCTACAAAA ACGTGAAGAC CTTCCAAAAG TTCTTAACGG ACTTGGGAATT	480
GCCATCCTTT CAACTTCTGA AGGTTTGCTT ACTGATAAAG AAGCACGCCA AAAGAATGTT	540
GGTGGTGAGG TTATCGCTTA CGTTTGGTAA AATCAAGATA CAAAGCTCGT AAAGAACAAA	600
GCAAAATTAG GAAGTTGGAG AAGTTTGTGTT ACAAACAGGC CAACTTATCT ATTTTGCACA	660
GTTCTTAGAG CGTGTTCAGT TCAGCTCTTG AGCTAAGTAA GTATCTGAAC CCCGTGAAAA	720
CTGGCCGTGC TGGCATGTTT GGGTAACAGG AGAaAATAAA CATGTCACGT ATTGGTAATA	780
AGTTCAGCTA AGGCCTTCGT AAAAGTT	807

1372

(2) INFORMATION FOR SEQ ID NO: 358:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 653 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 358:

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CCCAGTATTT TTGTCCAAGC ACGACCAGAA AAGGATGATA CAGATCTGGA ATTGGCTCTC      60
TTAACCATCT tTGAACAAAA TCCTCAGGCT CAGGTCAC TA TTTTCGGTGC CTTGGGTGGC      120
CGTATTGACC ATATGTTGGC CAATGTCTTT CTGCCTAGCA ATCCTAAGTT GGCACCCTAT      180
ATGCATCAAA TAGAAATTGA GGATGGGCAA AACTTGATTA CTTATTGTCC AGAAGGAATC      240
AGTCAGCTAG AACCTCGTTC AGACTACGAC TATCTAGCCT TTATGCCAGT TCGGGATAGC      300
CAAGTATGAG TTGACAGAGG AAAATTTTTT CTTTAAAAAA GTGTACGCTT CTAACGAATA      360
TATAGATAGG GAAGTGTCGG TAACTTGCCC AGATGGTTAT GTGGTCGTAC TGCATAGCAA      420
GGACAGGAGG TAGGATGGAA AGTTTACTTA TTCTATTATT AATTGCCAAT CTAGCTGGTC      480
TCTTTCTGAT TTGGCAAAGG CAGGATAGGC AGGAGAAACA CTTAAGTAAG AGCTTGGAGG      540
ATCAGGCAGA TCATTTGTCA GACCAGCTGG ATTACCGCTT TGACCAAGCC AGACAAGCCA      600
GCCAGTTAGA CCAAAAAGAT TTGGAAGTGG TTGTCAGCGA CCGTTTGCAA GAA              653

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(2) INFORMATION FOR SEQ ID NO: 359:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 641 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 359:

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CACCATGTGA TGTGACGCTG GCCACAGCTG TCAGAAATCT GCGGAGCCAT CGTGTGCAAT      60
GACTCTTCCC GATGTAATCT TGTTCATAGT CCTTTGATGA ATATGTTCAA GCTGTAGAAG      120
GTGCGCTTCC TGAACACTTA TCAACTGTTA CAGGCGAGTT GACCAGTCAG GAAACAGATG      180
GCTGGTACAC ACTTGCCAAC ACTTCTTCAT CCCGCATTTA CCTAAAACAA GCCTTCCAAG      240
AAAATAGCAA CCTCCTAGAG CAAGTGGTAG AACCTTGAC TATTATCACT GGTGGACACA      300
ACCACAAGGA CCAGTTGACC TATGCTTGGA AAACACTTTT GCAGAATGCG CCACATGATA      360
GTATCTGTGG CTGTAGCGTG GACGAAGTTC ACCGCGAGAT GGAAACGCGT TTTGCCAAGG      420

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1373

TCAACCAAGT AGGAACTTT GTTAAAAGTA ACTTGCTCAA CGAGTGGAAG GGTAATTTG	480
CTACGGATAA GGCTCAAAGT GACTATCTCT TACTGTCTAT TAACACAGGC TTGCATGATA	540
AGGTCGATAC TGTCAGCACA GTGATTGATG TGGCGACTTG TGATTTCAAG GAATTGCACC	600
CAACAGAAGG CTACAAAAAG ATGGCTGCTC TTATCTTGCC G	641

(2) INFORMATION FOR SEQ ID NO: 360:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1958 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 360:

CCTCAAGGCC AATTTGAAGG CTCTAAAACA ATGGAAAAGT GCTACACAGA TGTGACAGAA	60
TTTGCCATTC CAGCAAGTAC TCAAAAGCTT TACTTATCAC CAGTTTTAGA TGGCTTTAAT	120
AGCGAAATTA TTGCTTTTAA TCTTTGACT TCACCCAAGT TAGAACAAGT ACAAACAATG	180
TTAGAACAGG CATTCAAAGA GAAGCACTAC GAGAATACGA TTCTCCATAG TGACCAAGGC	240
TGGCAATATC AACACGATTC TTATCATCGG TTCCTAGAGA GTAAGGGAAT TCAAGCATCT	300
ATGTCACGCA AGGGCAACAG CCAAGACAAC GGTATGATGG AATCTTTCTT TGGCATTTTA	360
AAATCCGAAA TGTTTTATGG CTATGAGAAA ACATTTAAAT CACTTAACCA ATTGGAACAA	420
GCCATTATAG ACTATATTGA TTACTACAAC AACAAACGAA TTAAGGTAAA ACTAAAAGGA	480
CTTAGTCCTG TGCAGTACAG AACTAAATCC TTTGGATAAA TTAATTGTCT AACTTTTGG	540
GGTCAGTACA AAACCTCTGC TACTATGCGT TTTATTATTG AAAGACTTAT TGGACTTTCT	600
CTCAAATCGA GTTTTACTC AATTTCTTA CTTGATTGGG ATTGAAATTC CAATTAATTT	660
CTCTGAGTAG AGTGTCTTGA TATTGGCTTC ATCAACAGAG GCCTTATCAA TTTTACGTTT	720
CAAGAAAAAT TCTTGAATGG TTTGATTTT AGGCTCACGA ATAGCACGGT GTTTGTTTGA	780
GATGAGGATT TCATAGTGAA GCGGAGCTTG GGTAAAAATA ACATCTGTAT TCCCTGCAGA	840
ATAAACCTCA ACAAGGGTTG CATCGGTACT TTCTAGCTGA CTTTTTACAA GTTGCGAGTG	900
TGAGTTTGTC GTATTGATAA GCTTCATAAT ATTTCTCCG ATTTTCTAAT TCTATTATAG	960
CACTTTTGA ATAAAGTCGC TTGATTATA CTCAATGAAA ATCAAAGAGC AAAC TAGGAA	1020
GCTAGCCGCA GGCTATACTT GAGTACGGTA AGGCGACGCT GACGTGGTTT GAATTTTATT	1080
TTCGAAGAGT ATTAGCCAAT CTTATGCTGT TTTTCCAAG ATTCAATGGC CCATTTATGG	1140

1374

CTACCACGTT TAAGGTTTTT GATAGCCTCG TCAATAGGGA ACCAGGCAAT ATGATTAAAG	1200
TTTTCTAGTG GCTTTTGAC TTCTTTGAAA GGAGTTGCTT CATAGAGGTA GGCAGGATTG	1260
TAGTAGTAGG TATCACGATG ACGAGAATAG AAATATTCGT CAGCTTGTCG GTAATAGGTA	1320
CCAATTTCTG CTGTGAAACC AAGCTCTTCA ATCAACTCAT GCTTTAGGGC TTCCTGATGA	1380
TTTTCACCTG CTTCATTTT TCCACATGGT AGGAACCAAG CACCATTGTTG TTCTTGAACA	1440
AGAACAATTT GTTTTTGTTC AGGATTAGGG ATAACGTCAT ATACGCCATA GCGAGCAATA	1500
TAGTCTGTAT TCACTTTTTT TCTCCGAAAG TTGGGTTTGC CATTGCATTT TCCTCATTAT	1560
CTAGTATCGT TATTATTATA GTGAAATGAA CAAAAAATAG TACACAATGT GGTATAATCT	1620
TCTTATGGCA TATTCAATAG ATTTTCGTAA AAAAGTTCTC TCTTATTGTG AGCGAACAGG	1680
TAGTATAACA GAAGCATCAC ACGTTTCCA AATCTCACGT AATACCATT TATGGCTGGTT	1740
AAAGCTAAAA GAGAAAACAG GAGAGCTAAA CCACCAAGTA AAAGGAATAA AACCAAGAAA	1800
GGTTGATAGA GATAGACTTA AAAACTATCT TACTGACAAT CCAGACGCTT ATTTGACTGA	1860
AATAGCTTCT GAATTTGGCT GTCATCCAAC TACCATCCAC TATGCGCTCA AAGCTATGGG	1920
tACACTCGAA AAAAAAAGA ACTACACCTA CTATGAAC	1958

(2) INFORMATION FOR SEQ ID NO: 361:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 851 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 361:

TATGAAATTA AGTTATGATG ATAAAGTTCA GATCTATGAA CTTAGAAAAC AAGGATATAG	60
CTTAGAGAAG CTTTCAAATA AATTTGGGAT AACAATTCT AATCTTAGGT ATATGATTAA	120
ATTGATTGAT CGTTACGGAA TAGAGTTCGT CAAAAAAGGA AAAAATCGTT ACTATTCTCC	180
TGATTTAAAA CAAGAAATGA TTAATAAAGT CTGACATGAA GGCTGGACTA AAGATAGAGT	240
TTCTCTTGAA TACGGTCTCC CAAGTCGTAC GATACTTCTT AACTGGCTAG CACAATACAG	300
GAAAAACGGG TATACTATTG TTGAGAAAACC AAGAGGGAGA GTACCTGAGA GCGGAGAATG	360
CCATCCTAAA AAAGTTAAGA GAACTCCGAT TGAAGGAGGA AAAAGAGAAA GAAGAAAGAC	420
AGAAATTGTT TAAGAATTAA TGACTGAGTT TTCGTTAGAT CTTCTTTTAA AAGTCATTAA	480
ACTAGCTCGT TCGACCTACT ACTATCACTT GAAACAGCTA GATAAACCAG ATAAGGACCA	540
AGAGCTTAAA GCTGAAATTC AATCCATTTT TATCGAACAC AAAGGAAATT ATGCTTATCG	600

1375

TCGGATTTAT TTAGAACTAA GAAATCGTGG TTATCTGGTA AATCATAAAA GAGTTCAAGG	660
CTTGATGAAA GTACTCAATt TACAAGCTAA AACGCGACAG AAACGAAAAT ATTCTTCTCA	720
TAAAGGAGAC GTTGGCAAGA AGGCAGAGAA TCTCATTCAA GGCCAATTG AAGGCTCTAA	780
AACAATGGAA CAGTGCTACA CAGATGTGAC AGAATTTGCC ATTCCAGTAA GTACTTAAAA	840
GCTTTACTTA T	851

(2) INFORMATION FOR SEQ ID NO: 362:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1168 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 362:

GGGTAGAATC GATATCTCCA ATGAGTTGGT tTAGCTGGTG AAAGTGTAAA AAGATTTCGw	60
CCAATTCAAG GTTGAGGCAT CGCAAATAT GGACTGTTTC CTCGTCAGTT CTGGAAGAA	120
AACGGGATAA GGTGGCTGT GAAGCAAGCT GCCCTCCTC CAACAATTTT GGAAAGTAGG	180
CATCAGCTGA CAATTCTTTA CAAGCATAGT CCGTTCATA ACCTGTTAAC AGTTGAAAGA	240
GGAAGTGGAC AAGGATATCT GAATCCGAAT AACGACAGTA GCGGCGTTGG TCATTCGTTA	300
CTAAATACTT AGAAATCCGC TCTTTTAGTT TCAACTGGGA AAAAAGTTCC TGAAAAAAGA	360
TAAGACCACC ATACTGGGTT AAATGACCTC CATCGAAAGA TAGTTGGTAA AAAGACTTGT	420
TTTGGAAGTG ATGATTTGGT AAAGTGTTC TGTGAGTTTC CTTTCTTTT GTGTTTTTTT	480
CTACACTTAT ACCATAAAGG GGAACTCTT TTTGTCTAG TAAAAACAC CCATTGGGTG	540
AAAAAGAAA CCATCCAGGA TCTAAGCTAA GGCAAGGATT CTGGATGGTT TTTAGATTG	600
GGGTGAATAA TTGGGGTTT AGCTGCTTGC GGCCAATCAG GTTCAGATAC AAAAAGTTAC	660
TCATCAACCT TTAGTGAAA TCCAAGTACA TTAACTATC TATTAGACTA TTACGCTGAT	720
AATATAGTCA ATTGAAACAA GAACAAGACA AAAGAGCTC ATAAAAGGTA TTGCAACTTG	780
GTAATACCTT TTTGAGGTGC TTTTGATAT GAGCCCATGT TTTCTCAATA GGATTGTACT	840
CAGGTGAGTA GGGAGGAAGA GGTAAAAGTT TATACCCAAA CTCTTCACAC AAGAGTTCTA	900
ACTTACCCAT TCTATGGAAT CTTGCATTAT CCATAATAAT AACCGATGGT GTGTTTAATG	960
TTGGTAAGAG AAATTTCTGA AACCAAGCTT CAAAAAGTC GCTCGTCATC GTCTCTCGT	1020
AAGTTATTGG AGCGATTAA TCACCATTTG TTAGACCTGC AACCAAGAA ATCCTCTGAT	1080

1376

ATCTTCTTCC AGATACTTTG CCTCTTCTTA ACTGACCTTT TAATGAGCGA CCATATTCTC 1140

GATAAAAATA AGTATCGAAT CCTGTTTC 1168

(2) INFORMATION FOR SEQ ID NO: 363:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 4483 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 363:

GTCAGCTTCA GCAAGCCCAT CAGCTTCTGA ATCTGCATCA ACCAGTGCCT CCGCTTCAGC	60
GTCAACCAGT GCGTCGGCTT CAGCGTCGAC AAGTGCTTCG GCTTCAGCAT CAACGAGTGC	120
GTCGGCCTCA GCAAGCGCAA GTACCTCAGC GTCAGCTTCC GCCTCAACCA GTGCGTCGGC	180
TTCAGCAAGC ACAAGTGCGT CAGCCTCAGC AAGTATCTCA GCGTCTGAAT CGGCATCAAC	240
GAGTGCCTCT GAGTCAGCAT CAACGAGTAC GTCAGCCTCA GCAAGCACAT CAGCTTCTGA	300
ATCTGCATCA ACCAGTGCCT CAGCCTCAGC ATCGACAAGC GCCTCAGCTT CAGCAAGTAC	360
CAGTGCTTCA GCCTCAGCGT CGACAAGTGC GTCGGCCTCA ACCAGTGCAT CTGAATCGGC	420
ATCAACCAGT GCGTCAGCCT CAGCAAGTAC TAGTGCATCA GCTTCAGCAT CAACGAGTGC	480
ATCGGCTTCA GCATCAACCA GTGCCTCGGC TTCAGCGTCA ACCAGTGCCT CAGCTTCAGC	540
AAGTACCAGT GCTTCAGTCT CAGCATCAAC AAGTGCTTCA GCCTCAGCAT CGACAAGTGC	600
CTCGGCTTCA GCAAGCACAT CAGCATCTGA ATCAGCGTCG ACAAGCGCCT CAGCTTCAGC	660
AAGTACCAGT GCGTCAGCCT CAGCGTCGAC AAGTGCGTCA GCCTCAGCAA GTACTAGTGC	720
ATCAGCTTCA GCATCAACGA GTGCATCGGC TTCGGCGTCA ACCAGTGCAT CAGAGTCAGC	780
AAGTACCAGT GCGTCAGCTT CCGCATCAAC AAGTGCTTCG GCTTCAGCAA GCACCAAGTGC	840
GTCGGCTTCA GCAAGTACTA GCGCCTCAGC CTCAGCCTCA ACCAGTGCCT CAGCCTCAGC	900
AAGTATCTCA GCGTCTGAAT CGGCATCAAC GAGTGCGTCC GCTTCAGCAA GTACTAGCGC	960
CTCAGCCTCA GCGTCAACAA GTGCATCGGC TTCAGCGTCA ACGAGTGCCT CTGAATCGGC	1020
ATCAACGAGT GCGTCCGCTT CAGCAAGTAC TAGCGCCTCA GCCTCAGCGT CAACAAGTGC	1080
ATCGGCTTCA GCATCAACGA GTGCGTCCGC TTCAGCAAGT ACTAGCGCCT CAGCCTCAGC	1140
GTCAACAAGT GCATCGGCTT CAGCGTCAAC GAGTGCGTCT GAGTCAGCAT CAACGAGTGC	1200
GTCAGCCTCA GCAAGCACAT CAGCTTCTGA ATCTGCATCA ACCAGTGCCT CAGCCTCAGC	1260
ATCGACAAGC GCCTCAGCTT CAGCAAGTAC CAGTGCGTCA GCTCAGCGTC GACAAGTGCs	1320

1377

TCrGCTTCAG CAAGTACCAG TGCCTCAGCC TCAGCAAGTA CCAGTGckTC AGCCTCAGCG	1380
TCGACAAGTG CGTCGGCCTC AACCAGTGCA TCTGAATCGG CATCAACCAG TGCCTCAGCC	1440
TCAGCAAGTA CTAGCGCCTC AGCCTCAGCA TCAACGAGTG CGTCCGCTTC AGCAAGTACT	1500
AGTGCAATCAG CTTCAGCAAG TACTAGCGCC TCAGCCTCAG CGTCGACAAG CGCCTCAGCT	1560
TCAGCAAGTA CCAGTGCGTC AGCCTCAGCG TCGACAAGTG CGTCGGCTTC AGCAAGTACC	1620
TCAGCGTCTG AATCAGCATC AACAGTGCG TCGGCTTCAG CATCAACGAG TGCATCAGCT	1680
TCAGCATCAA CAAGTGCTTC AGCTTCAGCA AGTACCAGTG CGTCGGCTTC AGCATCAACG	1740
AGTGCTTCAG TCTCAGCGTC AACCAGTGCC TCTGAATCCG CATCAACAAG TGCTCGGCT	1800
TCAGCAAGCA CCAGTGCTTC GGCTTCAGCG TCAACGAGTG CGTCTGAGTC AGCATCAACG	1860
AGTGCGTCAC CTCAGCAAGC ACATCAGCTT CTGAATCTGC ATCAACCAGT GCGTCACTTC	1920
CGCATCAACA AGCGCCTCGG CCTCAGCAAG TACAAGTGCT TCAGCCTCAG CATCAACCAG	1980
TGCATCAGCT TCAGCCTCAA CAAGTGCTTC AGCCTCAGCG TCAACCAGTG CCTCGGCTTC	2040
AGCAAGTACC AGTGCGTCAG cTTcAGCAAG CACAAGTGCG TCAGCTTCAG CATCAACCAG	2100
TGCTTCGGCT TCGGCATCAA CAAGTGCTTC AGCATCAGCA TCAACGAGTG CGTCAstCA	2160
GCAAGTACTA GTGCATCAGC ATCAGCATCA ACCAGTGCAT CAGCCTCAGC AAGTATCTCA	2220
GCGTCTGAAT CGGCATCAAC GAGTGATCA GCATCAGCAT CAACGAGTGC ATCGGCTTCA	2280
GCGTCAACCA GTGCATCAGT CTCAGCAAGC ACCAGTGCGT CGGCTTCAGC ATCAACCAGT	2340
GCCTCAGCCT CAGCAAGTAT CTCAGCGTCT GAATCGGCAT CAACGAGTGC GTCAGcCTCA	2400
GCAAGTACTA GTGCATCAGC ATCAGCATCA ACGAGTGCAT CGGCTTCAGC AAGTACCAGC	2460
GCCTCAGCTT CAGCAAGCAC CAGTGCGTCA GCCTCAGCAA GTACCAGCGC CTCAGCCTCA	2520
GCAAGCACCA GTGCCTCAGC TTCAGCAAGT ACCAGTGCGT CAGCCTCAGC GTCGACAAGT	2580
GCGTCGGCTT CAGCAAGTAC CTCAGCGTCT GAATCAGCAT CAACGAGTGC ATCAGCTTCA	2640
GCATCAACAA GTGCTTCAGC TTCAGCAAGT ACCAGTGCGT CGGCTTCAGC ATCAACGAGT	2700
GCTTCAGTCT CAGCGTCAAC CAGTGCTCT GAATCAGCAT CAACAAGTGC CTCGGCTTCA	2760
GCAAGCACCA GTGCGTCGGC TTCAGCAAGT ACTAGTGCAT CGGCTTCAGC ATCGACAAGT	2820
GCGTCTGAAT CGGCATCAAC GAGTGCTTCG GCTTCAGCAT CAACGAGTGC GTCAGCCTCA	2880
GCAAGCACAT CAGCTTCTGA ATCTGCATCA ACCAGTGCGT CCGCTTCAGC GTCAACCAGT	2940
GCGTCGGCTT CAGCGTCGAC AAGTGCTTCG GCTTCAGCAT CAACGAGTGC GTCGGCCTCA	3000
GCAAGCGCAA GTACCTCAGC GTCAGCTTCC GCCTCAACCA GTGCGTCCGC TTCAGCAAGC	3060

1378

ACAAGTGCCT CAGCCTCAGC AAGTATCTCA GCGTCTGAAT CGGCATCAAC GAGTGCCTCG	3120
GCCTCAGCAA GCGCAAGTAC CTCAGCGTCA GCTTCCGCCT CAACCAGTGC GTCGGCTTCA	3180
GCAAGCACAA GTGCGTCAGC CTCAGCAAGT ATCTCAGCGT CTGAATCGGC ATCAACGAGT	3240
GCGTCTGAGT CAGCATCAAC GAGTACGTCA GCCTCAGCAA GCACATCAGC TTCTGAATCG	3300
GCATCAACCA GTGCGTCAGC CTCAGCATCG ACAAGCGCCT CAGCTTCAGC AAGTACCAGT	3360
GCTTCAGCCT CAGCGTCGAC AAGTGCCTCG GCCTCAACCA GTGCATCTGA ATCGGCATCA	3420
ACCAAGTGCCT CAGCCTCAGC AAGTACTAGT GCATCAGCTT CAGCATCAAC GAGTGCATCG	3480
GCTTCAGCAT CAACCAGTGC CTCGGCTTCA GCGTCAACCA GTGCGTCAGC TTCAGCAAGT	3540
ACCAAGTGCCT CAGTCTCAGC ATCAACAAGT GCTTCAGCCT CAGCATCGAC AAGTGCCTCG	3600
GCTTCAGCAA GCACATCAGC ATCTGAATCA GCGTCGACAA GCGCCTCAGC TTCAGCAAGT	3660
ACCAAGTGCCT CAGCCTCAGC GTCGACAAGT GCGTCAGCCT CAGCAAGTAC TAGTGCATCA	3720
GCTTCAGCAT CAACGAGTGC ATCGGCTTCG GCGTCAACCA GTGCATCAGA GTCAGCAAGT	3780
ACCAAGTGCCT CAGCTTCCGC ATCAACAAGT GCCTCGGCTT CAGCAAGCAC CAGTGCCTCG	3840
GCTTCAGCAA GTACTAGCGC CTCAGCCTCA GCCTCAACCA GTGCGTCAGC CTCAGCAAGT	3900
ATCTCAGCGT CTGAATCGGC ATCAACGAGT GCGTCCGCTT CAGCAAGTAC TAGCGCCTCA	3960
GCCTCAGCGT CAACAAGTGC ATCGGCTTCA GCGTCAACGA GTGCGTCTGA ATCGGCATCA	4020
ACGAGTGCCT CCGCTTCAGC AAGTACTAGC GCCTCAGCCT CAGCGTCAAC AAGTGCATCG	4080
GCTTCAGCAT CAACGAGTGC GTCCGCTTCA GCAAGTACTA GCGCCTCAGC CTCAGCGTCA	4140
ACAAGTGCAT CGGGTTCAGC GTCAACGAGT GCGTCTGAGT CAGCATCAAC GAGTGCCTCA	4200
CCTCAKCAAG CACATCAGCT TCTGAATCTG CATCAACCAG TGCCTCACTT CCGCATCAAC	4260
AAGCGCCTCG GCCTCAGCAA GTACAAGTGC TTCAGCCTCA GCATCAACCA GTGCATCAGC	4320
TTCAGCCTCA ACAAGTGCTT CAGCCTCAGC GTCAGACCAG TGCCTCGGCT TCAGCAAGTA	4380
CCAGTGCCTC ACTTCAGCAA GCACAAGTGC GTCAGCTTCA GCATCAACCA GTGCTTCGCG	4440
TTCGGCATCA ACAAGTGCCT CAGCATCAGC ATCAACGAGT GCG	4483

(2) INFORMATION FOR SEQ ID NO: 364:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 2550 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 364:

1379

GTACCTCAGC	GTCCTTCCGC	CTCAACCAGT	GCGTCCGCTT	CAGCAAGCAC	AAGTGCCTCA	60
CCTCAGCAAG	TATCTCAGCG	TCTGAATCGG	CATCAACGAG	TGCGTCGGCC	TCAGCAAGCG	120
CAAGTACCTC	AGCGTCACTT	CCGCCTCAAC	CAGTGCCTCG	GCTTCAGCAA	GCACAAGTGC	180
GTCAsCTCAG	CAAGTATCTC	AGCGTCTGAA	TCGGCATCAA	CGAGTGCCTC	TGAGTCAGCA	240
TCAACGAGTA	CGTCAGCCTC	AGCAAGCACA	TCAGCTTCTG	AATCGGCATC	AACCAGTGCG	300
TCAGCCTCAG	CATCGACAAG	CGCCTCAGCT	TCAGCAAGTA	CCAGTGCTTC	AGCCTCAGCG	360
TCGACAAGTG	CGTCGGCCTC	AACCAGTGCA	TCTGAATCGG	CATCAACCAG	TGCGTCAGCC	420
TCAGCAAGTA	CTAGTGATC	AGCTTCAGCA	TCAACGAGTG	CATCGGCTTC	AGCATCAACC	480
AGTGCCCTCG	CTTCAGCGTC	AACCAGTGCG	TCAGCTTCAG	CAAGTACCAG	TGCTTCAGTC	540
TCAGCATCAA	CAAGTGCTTC	AGCCTCAGCA	TCGACAAGTG	CCTCGGCTTC	AGCAAGCACA	600
TCAGCATCTG	AATCAGCGTC	GACAAGTGCG	TCGGCCTCAA	CCAGTGATC	TGAATCGGCA	660
TCAACCAGTG	CGTCAGCCTC	AGCAAGTACT	AGTGATCAG	CTTCAGCATC	AACGAGTGCA	720
TCGGCTTCGG	CGTCAACCAG	TGCATCAGAG	TCAGCAAGTA	CCAGTGCCTC	AGCTTCCGCA	780
TCAACAAGTG	CCTCGGCTTC	AGCAAGCACA	TCAGCATCTG	AATCAGCGTC	AACCAGTGCT	840
TCGGCTTCAG	CAAGTACCAG	TGCTTCAGCT	TCAGCATCAA	CCAGCGCCTC	GGCCTCAGCA	900
AGCACCTCAG	CTTCTGAATC	GGCCTCAACC	AGCGCCTCGG	CCTCAGCAAG	CACCTCAGCT	960
TCTGAATCGG	CCTCAACCAG	CGCCTCAGCC	TCAGCATCAA	CGAGTGCTTC	GGCTTCAGCA	1020
AGCACAAGCG	CCTCGGCTTC	AGCATCAACG	AGTACGTCAG	CTTCAGCGTC	AACCAGTGCT	1080
TCAGCCTCAG	CATCAACAAG	TGCGTCAGCC	TCAGCAAGTA	TCTCAGCGTC	TGAATCGGCA	1140
TCAACGAGTG	CGTCTGAGTC	AGCATCAACG	AGTACGTCAG	CCTCAGCAAG	CACAAGTGCT	1200
TCAGCCTCAG	CAAGTATCTC	AGCGTCTGAA	TCGGCATCAA	CGAGTGCCTC	CGCTTCAGCA	1260
AGTACTAGCG	CCTCAGCATC	AGCGTCAACA	AGTGCTTCGG	CTTCAGCGTC	AACGAGTGCG	1320
TCTGAGTCAG	CATCAACGAG	TACGTCAGCC	TCAGCAAGCA	CATCAGCTTC	TGAATCTGCA	1380
TCAACCAGTG	CGTCAGCCTC	AGCATCGACA	AGCGCCTCAG	CTTCAGCAAG	TACCAGTGCG	1440
TCAGCCTCAG	CAAGTACCAG	TGCTTCAGCC	TCAGCGTCGA	CAAGTGCCTC	GGCCTCAACC	1500
AGTGATCTG	AATCGGCATC	AACCAGTGCG	TCAGCTCAGC	AAGTACTAGT	GCATCAGCTT	1560
CAGCATCAAC	GAGTGATCG	GCTTCGGCGT	CAACCAGTGC	ATCAGAGTCA	GCAAGTACCA	1620
GTGCGTCACT	TCCGCATCAA	CAAGTGCCCTC	GGCTTCAGCA	AGCACATCAG	CATCTGAATC	1680
AGCGTCAACC	AGTGCTTCGG	CTTCAGCAAG	TACCAGTGCT	TCAGCTTCAG	CATCAACCAG	1740

1380

CGCCTCGGCC TCAGCAAGCA CCTCAGCTTC TGAATCGGCC TCAACCAGCG CCTCGGCCTC	1800
AGCAAGCACC TCAGCTTCTG AATCGGCCTC AACCAGCGCC TCAGCCTCAG CATCAACGAG	1860
TGCTTCGGCT TCAGCAAGCA CAAGCGCCTC GGGTTCAGCA TCAACGAGTA CGTCAGCTTC	1920
AGCGTCAACC AGTGCTTCAG CCTCAGCATC AACAAGTGGC TCAGCCTCAG CAAGTATCTC	1980
AGCGTCTGAA TCGGCATCAA CGAGTGGCTC TGAGTCAGCA TCAACGAGTA CGTCAGCCTC	2040
AGCAAGCACC TCAGCTTCTG AATCGGCCTC AACCAGTGGC TCAGCCTCAG CATCGACAAG	2100
CGCCTCAGCT TCAGCAAGTA CCAGTGCTTC AGCCTCAGCG TCGACAAGTG CGTCGGCCTC	2160
AACCAGTGCA TCTGAATCGG CATCAACCAG TGCGTCAGCC TCAGCAAGTA CTAGTGCATC	2220
GGCTTCAGCA TCAACCAGTG CCTCGGCTTC AGCGTCAACC AGTGCGTCAG CTTTCAGCAAG	2280
TACCAGTGCT TCAGTCTCAG CATCAACAAG TGCTTCAGCC TCAGCATCGA CAAGTGCCTC	2340
GGCTTCAGCA AGCACATCAG CATCTGAATC AGCGTCGACA AGCGCCTCAG CTTTCAGCAAG	2400
TACCAGTGGC TCAGCCTCAG CGTCGACAAG TGCGTCAGCT ACAGCAAGTA CTAGTGCATC	2460
AGCTTCAGCA TCAACGAGTG CATCGGCTTC GCGTCAACC AGTGCATCAG AGTCAGCAAG	2520
TACCAGTGGC TCAGTTCACG CATCAACAAG	2550

(2) INFORMATION FOR SEQ ID NO: 365:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1436 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 365:

ACCCAGCAAG TACTAGTGCA TCGGCTTCAG CAAGCACCAG TGCGTCGGCT TCAGCATCAA	60
CCAGTGCCTC AGCCTCAGCA AGTATCTCAG CGTCTGAATC GGCATCAACG AGTGCGTCAC	120
CTCAGCAAGT ACTAGTGCAT CAGCATCAGC ATCAACGAGT GCATCGGCTT CAGCAAGTAC	180
CAGCGCCTCA GCTTCAGCAA GCACCACTGC GTCAsCTCAG CAAGTACCAG CGCCTCAGCC	240
TCAGCAAGCA CCAGTGCCTC AGCTTCAGCA AGTACCAGTG CGTCAGCCTC AGCGTCGACA	300
AGTGCGTCGG CTTTCAGCAAG TACCTCAGCG TCTGAATCAG CATCAACGAG TGCATCAGCT	360
TCAGCATCAA CAAGTGCTTC AGCTTCAGCA AGTATCTCAG CGTCTGAATC GGCATCAACG	420
AGTGCGTCCG CTTTCAGCAAG TACTAGCGCC TCAGCATCAG CGTCAACAAG TGCTTCGGCT	480
TCAGCGTCAA CGAGTGGCTC TGAGTCAGCA TCAACGAGTA CGTCAGCCTC AGCAAGCACA	540
TCAGCTTCTG AATCTGCATC AACCAGTGGC TCAGCCTCAG CATCGACAAG CGCCTCAGCT	600

1381

TCAGCAAGTA CCAGTGCCTC AgCCTCAGCA AGTACCAGTG CTTCAGCCTC AGCGTCGACA	660
AGTGCCTCGG CCTCAACCAG TGCATCTGAA TCGGCATCAA CCAGTGCCTC AGCCTCAGCA	720
AGTACTAGCG CCTCAGCCTC AGCATCAACG AGTGCCTCCG CTTCAGCAAG TACTAGTGCA	780
TCAGCTTCAG CAAGTACTAG CGCCTCAGCC TCAGCGTCGA CAAGCGCCTC AGCTTCAGCA	840
AGTACCAGTG CGTCAGCCTC AGCGTCGACA AGTGCCTCGG CTTCAGCAAG TACCTCAGCG	900
TCTGAATCAG CATCAACAAG TGCCTCGGCT TCAGCATCAA CGAGTGCATC AGCTTCAGCA	960
TCAACAAGTG CTTCAGCTTC AGCAAGTACC AGTGCCTCGG CTTCAGCATC AACGAGTGCT	1020
TCAGTCTCAG CGTCAACCAG TGCCTCTGAA TCCGCATCAA CAAGTGCCTC GGCTTCAGCA	1080
AGCACCAGTG CTTCGGCTTC AGCGTCAACG AGTGCCTCTG AGTCAGCATC AACGAGTGCG	1140
TCAGCCTCAG CAAGCACATC AGCTTCTGAA TCTGCATCAA CCAGTGCCTC AGCTTCCGCA	1200
TCAACAAGCG CCTCGGCCTC AGCAAGTACA AGTGCTTCAG CCTCAGCATC AACCAGTGCA	1260
TCAGCTTCAG CCTCAACAAG TGCTTCAGCC TCAGCGTCAA CCAGTGCCTC GGCTTCAGCA	1320
AGTACCAGTG CGTCAGCTTC AGCAAGCACA AGTGCCTCAG CTTCAGCATC AACCAGTGCT	1380
TCGGCTTCGG CATCAACAAG TGCCTCAGCA TCAGCATCAA CGAGTGCCTC AGCCGG	1436

(2) INFORMATION FOR SEQ ID NO: 366:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 735 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 366:

GCAGTTGCCA CACCGTGCTG ACCAGCACCC GTTCCTGCGA TAATTTCTTT TTTACCCATG	60
CGTWTGGCAA GCCAAACTTG TCCTAAGGCA TTGTTAATCT TGTGGGCTCC TGTATGGTTA	120
AGGTCTTCCC GTTTGAGATA AATCTTGCTC CGCCAATATG CTGGGTCAAG TTTTTCGCT	180
AATAAAGAGG AGTTTCACGT CCTACGTACT GCGCAAAAG CTGGTTTAAT TCCTCTTGGA	240
AACTTGGGTC TGCCTGACTT TCACGGTAGG CCTTCTCAA CTCCAAACT GCTGTCATCA	300
ATGTTTCTGG GACAAAACGT CCGCCGAATT TTCCGTAAAA TCCATCTTTA TTTGGTTCCT	360
GATATGCCAT GCTTTACCCT CTCTATAAAT CTTCTAATCT TTTCATGATC TTTTGTCCA	420
TCTGTCTCCA CTCCGCTCGA TACATCTACT GCATAGGAG TAAAGTGTTG AATTGCTTTT	480
ACTACATTAT CTTCATTAAG GCCACCTGCG ATAAAGAAGG GCTGTGCTAG TCCAGTCGTA	540

1382

TCCAGTTGAC	CCCAATCAAA	GGGCTGGCCA	CTTCCTGCCA	CAGGGGCATC	AAAGAGTAGA	600
TAATCTGCCT	GAGAATTGGG	GACATGCCCA	TTTCCATCTA	CCTGCACAGC	CTGAATACTG	660
GCACAAGGCA	AATTCTCAAA	TAAATCATCT	GCCACCTGAC	CGTGAAGTTG	AACCAAGTCC	720
AAGCCGGGGA	TCCTC					735

(2) INFORMATION FOR SEQ ID NO: 367:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1702 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 367:

TACTAGCGCC	TCAGCCTCAG	CGTCAACAAG	TGCATCGGCT	TCAGCATCAA	CGAGTGCCTC	60
CGCTTCAGCA	AGTACTAGCG	CCTCAGCCTC	AGCGTCAACA	AGTGCATCGG	CTTCAGCGTC	120
AACGAGTGCG	TCTGAGTCAG	CATCAACGAG	TGCGTCAGCC	TCAGCAAGCA	CATCAGCTTC	180
TGAATCTGCA	TCAACCAGTG	CGTCAGCCTC	AGCATCGACA	AGCGCCTCAG	CTTCAGCAAG	240
TACCAGTGCG	TCAGCCTCAG	CGTCGACAAG	TGCGTCGGCT	TCAGCAAGTA	CCAGTGCCTC	300
AGCCTCAGCA	AGTACCAGTG	CGTCAGCCTC	AGCGTCGACA	AGTGCCTCGG	CCTCAACCAG	360
TGCATCTGAA	TCGGCATCAA	CCAGTGCCTC	AGCCTCAGCA	AGTACTAGTG	CATCAGCTTC	420
AGCATCAACG	AGTGCATCGG	CTTCAGCATC	AACCAGTGCA	TCAGAGTCAG	CAAGTACCAG	480
TGCGTCAGCT	TCCGCATCAA	CAAGTGCCTC	GGCTTCAGCA	AGTACTAGCG	CCTCAGCCTC	540
AGCGTCAACA	AGTGCTTCAG	CTTCCGCGTC	AACCAGCGCC	TCGGCCTCAG	CAAGTATCTC	600
AGCGTCTGAA	TCGGCATCAA	CAAGTGCCTC	GGCTTCAGCA	TCAACGAGTG	CATCAGTCTC	660
AGCAAGCACC	AGTGCCTCGG	CCTCAGCAAG	CACCAGCGCG	TCTGAATCCG	CATCAACCAG	720
TGCCTCAGCT	TCAGCAAGTA	CCTCAGCATC	TGAATCAGCA	TCAACAAGTG	CATCGGCTTC	780
AGCAAGCACA	AGTGCTTCAG	CCTCAGCAAG	TATCTCAGCG	TCTGAATCGG	CATCAACGAG	840
TGCGTCCGCT	TCAGCAAGTA	CTAGCGCCTC	AGCATCAGCG	TCAACAAGTG	CTTCGGCTTC	900
AGCGTCAACG	AGTGCCTCTG	AGTCAGCATC	AACGAGTACG	TCAGCCTCAG	CAAGCACATC	960
AGCTTCTGAA	TCTGCATCAA	CCAGTGCCTC	AGCCTCAGCA	TCGACAAGCG	CCTCAGCTTC	1020
AGCAAGTACC	AGTGCCTCAG	CCTCAGCAAG	TACCAGTGCT	TCAGCCTCAG	CGTCGACAAG	1080
TGCGTCCGCC	TCAACCAGTG	CATCTGAATC	GGCATCAACC	AGTGCCTCAG	CCTCAGCAAG	1140
TACTAGCGCC	TCAGCCTCAG	CATCAACGAG	TGCGTCCGCT	TCAGCAAGTA	CTAGTGATC	1200

1383

AGCATCAGCA TCAACGAGTG CATCGGCTTC AGCAAGTACC AGCGCCTCAG CTTCAGCAAG	1260
CACCAGTGCG TCAGCCTCAG CAAGTACCAG CGCCTCAGCC TCAGCAAGCA CCAGTGCCTC	1320
AGCTTCAGCA AGTACCAGTG CGTCAGCCTC AGCGTCGACA AGTGCGTCGG CTTCAGCAAG	1380
TACCTCAGCG TCTGAATCAG CATCAACGAG TGCATCAGCT TCAGCATCAA CAAGTGCTTC	1440
AGCTTCAGCA AGTACCAGTG CGTCGGCTTC AGCATCAACG AGTGCTTCAG TCTCAGCGTC	1500
AACCAGTGCC TCTGAATCAG CATCAACAAG TGCCTCGGCT TCAGCAAGCA CCAGTGCCTC	1560
GGCTTCAGCA AGTACTAGTG CATCGGCTTC AGCATCGACA AGTGCGTCTG AATCGGCATC	1620
AACGAGTGCT TCGGCTTCAG CATCAACGAG TCGCTCAGCC TCAGCAAGCA CATCAGCTTC	1680
TGAATCTGCA TCAACCAGTG CG	1702

(2) INFORMATION FOR SEQ ID NO: 368:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 941 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 368:

ACCAGTGCA CAGCTTCAGC CTCAACAAGT GCTTCAGCCT CAGCGTCAAC CAGTGCCTCG	60
GCTTCAGCAA GTACCAGTGC GTCACCTCAG CAAGCACAAG TGCCTCACTT CAGCATCAAC	120
CAGTGCTTCG GCTTCGGCAT CAACAAGTGC CTCAGCATCA GCATCAACGA GTGCGTCACC	180
TCAGCAAGTA CTAGTGATC AGCATCAGCA TCAACCAGTG CATCAGCCTC AGCAAGTATC	240
TCAGCGTCTG AATCGGCATC AACGAGTGCA TCAGCATCAG CATCAACGAG TGCATCGGCT	300
TCAGCGTCAA CCAGTGATC AGTCTCAGCA AGCACCAGTG CGTCGGCTTC AGCATCAACG	360
AGTGCCTCAG CCTCAGCAAG TATCTCAGCG TCTGAATCGG CATCAACGAG TGCCTCAGCC	420
TCAGCAAGTA CTAGTGATC GGCTTCAGCA AGCACCAGTG CGTCGGCTTC AGCATCAACC	480
AGTGCCTCAG CCTCAGCAAG TATCTCAGCG TCTGAATCGG CATCAACGAG TGCCTCAGCC	540
TCAGCAAGTA CTAGTGATC AGCATCAGCA TCAACGAGTG CATCGGCTTC AGCAAGTACC	600
AGCGCCTCAG CTTCAGCAAG CACCAGTGCG TCAGCCTCAG CAAGTACCAG CGCCTCAGCC	660
TCAGCAAGCA CCAGTGCCTC AGCTTCAGCA AGTACCAGTG CGTCAGCCTC AGCGTCGACA	720
AGTGCGTCGG CTTCAGCAAG TACCTCAGCG TCTGAATCAG CATCAACGAG TGCATCAGCT	780
TCAGCATCAA CAAGTGCTTC AGCTTCAGCA AGTACCAGTG CGTCGGCTTC AGCATCAACG	840

1384

AGTGCTTCAG TCTCAGCGTC AACCAGTGCC TCTGAATCAG CATCAACAAG TGCCTCGGCT 900

TCAGCAAGCA CCAAGTGCCTC GGCTTCAGCA AGTACTAGTG C 941

(2) INFORMATION FOR SEQ ID NO: 369:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 869 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 369:

CAGCAAGTAC TAGTGCATCA GCTTCAGCAT CAACGAGTGC ATCGGCTTCT GCGTCAACCA 60

GTGCATCAGA GTCAGCAAGT ACCAGTGCCT CAGCTTCCGC ATCAACAAGT GCCTCGGCTT 120

CAGCAAGCAC CAGTGCCTCG GCTTCAGCAA GTACTAGCGC CTCAGCCTCA GCCTCAACCA 180

GTGCGTCAGC CTCAGCAAGT ATCTCAGCGT CTGAATCGGC ATCAACGAGT GCGTCCGCTT 240

CAGCAAGTAC TAGCGCCTCA GCCTCAGCGT CAACAAGTGC ATCGGCTTCA GCGTCAACGA 300

GTGCGTCTGA ATCGGCATCA ACGAGTGCCT CCGCTTCAGC AAGTACTAGC GCCTCAGCCT 360

CAGCGTCAAC AAGTGCATCG GCTTCAGCAT CAACGAGTGC GTCCGCTTCA GCAAGTACTA 420

GCGCCTCAGC CTCAGCGTCA ACAAGTGCAT CGGCTTCAGC GTCAACGAGT GCGTCTGAGT 480

CAGCATCAAC GAGTGCCTCA GCCTCAGCAA GCACATCAGC TTCTGAATCT GCATCAACCA 540

GTGCGTCAGC CTCAGCATCG ACAAGCGCCT CAGCTTCAGC AAGTACCACT GCGTCAGCCT 600

CAGCGTCGAC AAGTGCCTCG GCTTCAGCAA GTACCAAGTGC GTCAGCCTCA GCAAGTACCA 660

GTGCGTCAGC CTCAGCGTCA ACAAGTGCCT CGGCCTCAAC CAGTGCATCT GAATCGGCAT 720

CAACCAGTGC GTCAGCCTCA GCAAGTACTA GTGCATCAGC TTCAGCATCA ACGAGTGCAT 780

CGGCTTCAGC ATCAACCAGT GCATCAGAGT CAGCAAGTAC CAGTGCCTCA GATTCGGCAT 840

GCAACAAGTG CCTCGGCTTC AGCAAGTAC 869

(2) INFORMATION FOR SEQ ID NO: 370:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 750 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 370:

TCAACAAGTG CCTCAGCATC AGCATCAACG AGTGCCTCAG CCTCAGCAAG TACTAGTGCA 60

1385

TCAGCATCAG CATCAACCAG TGCATCAGCC TCAGCAAGTA TCTCAGCGTC TGAATCGGCA	120
TCAACGAGTG CATCAGCATC AGCATCAACG AGTGCATCGG CTTCAGCGTC AACCAGTGCA	180
TCAGTCTCAG CAAGCACCAG TGCCTCGGCT TCAGCATCAA CGAGTGCCTC AGCCTCAGCA	240
AGTATCTCAG CGTCTGAATC GGCATCAACG AGTGCCTCAG CCTCAGCAAG TACTAGTGCA	300
TCGGCTTCAG CAAGCACCAG TGCCTCGGCT TCAGCATCAA CCAGTGCCTC AGCCTCAGCA	360
AGTATCTCAG CGTCTGAATC GGCATCAACG AGTGCCTCAG CCTCAGCAAG TACTAGTGCA	420
TCAGCATCAG CATCAACCAG TGCATCGGCT TCAGCAAGTA CCAGCGCCTC AGCTTCAGCA	480
AGCACCAGTG CGTCAGCCTC AGCAAGTACC AGCGCCTCAG CCTCAGCAAG CACCAGTGCC	540
TCAGCTTCAG CAAGTACCAG TGCCTCAGCC TCAGCGTCGA CAAGTGCCTC GGCTTCAGCA	600
AGTACCTCAG CGTCTGAATC AGCATCAACG AGTGCATCAG CTTCAGCATC AACAAAGTGCT	660
TCAGCTTCAG CAAGTATCTC AGCGTCTGAA TCGGCATCAA CGAGTGCCTC CGCTTCAGCA	720
AGTACTAGCG CCTCAGCATC AGCGTCAACG	750

(2) INFORMATION FOR SEQ ID NO: 371:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 957 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 371:

CCGGA AAAACA GCTCTGGCGC TTGGTCTTGC CCAGCGTATT GCTAGTGGTG ACGTGCCTGC	60
GGAAATGGCT AAGATGCGCG TGTTAGAACT TGATTGATG AATGTCGTTG CAGGGACACG	120
CTTCCGTGGT GACTTTGAAG AACGCATGAA TAATATCATC AAGGATATTG AAGAAGATGG	180
CCAAGTCATC CTCTTTATCG ATGAACTCCA CACCATCATG GGTTCCTGGTA GCGGGATTGA	240
TTGACTCTG GATGCGGCCA ATATCTTGAA ACCAGCCTTG GCGCGTGGAA CTTTGAGAAC	300
GGTTGGTGCC ACTACTCAGG AAGAATATCA AAAACATATC GAAAAAGATG CGGCACTTTC	360
TCGTCGTTTC GCTAAAGTGA CGATTGAAGA ACCAAGTGTG GCAGATAGTA TGA TATTTT	420
ACAAGGTTTG AAGGCGACTT ATGAGAAACA TCACCGTGTA CAAATCACAG ATGAAGCGGT	480
TGAAACAGCG GTTAAGATGG CTCATCGTTA TTAAACAGT CGTCACTTGC CAGACTCTGC	540
TATCGATCTC TTGGATGAGG CGGCAGCAAC AGTGCAAAAT AAGGCAAAGC ATGTAAAAGC	600
AGACGATTCA GATTTGAGTC CAGCTGACAA GGCCCTGATG GATGGCAAGT GGAAACAGGC	660

1386

AGCCAGCTA ATCGCAAAAG AAGAGGAAGT ACCTGTCTAC AAAGACTTGG TGACAGAGTC	720
TGATATTTTG ACCACCTTGA GTCGCTTGTC AGGAATCCCA GTTCAAAAAC TGA CTCAAAC	780
GGATGCTAAG AAGTATTTAA ATCTTGAAGC AGAACTCCAT AAACGGGTTA TCGGTCAAGA	840
TCAAGCTGTT TCAAGCATTA GCCGTGCCAT TCGCCGCAAC CAGTCAGGGA TTCGCAGTCA	900
TAAGCGTCCG ATTGGTTCCT TTATGTTCTT AGGGCTTACA GGTGTCGGGG TATCCGA	957

(2) INFORMATION FOR SEQ ID NO: 372:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 807 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 372:

CAAAGCGCCT CAGCTTCAGC ATCAACAAGT GCGTCGGCTT CAGCATCAAC CAGTGCCTCG	60
GCTTCAGCGT CAACCAAGTGC GTCACATTCA GCAAGTACCA GTGCTTCAGT CTCAGCATCA	120
ACAAGTGCTT CAGCCTCAGC ATCGACAAGT GCCTCGGCTT CAGCAAGCAC ATCAGCATCT	180
GAATCAGCGT CAACCAAGTGC TTCGGCTTCA GCAAGTACCA GTGCTTCAGC TTCAGCATCA	240
ACCAGCGCCT CGGCCTCAGC AAGCACCTCA GCTTCTGAAT CGGCCTCAAC CAGCGCCTCG	300
GCCTCAGCAA GCACCTCAGC TTCTGAATCG GCCTCAACCA GCGCCTCAGC CTCAGCATCA	360
ACGAGTGCTT CGGCTTCAGC AAGCACAAGC GCCTCGGGTT CAGCATCAAC GAGTACGTCA	420
GCTTCAGCGT CAACCAAGTGC TTCAGCCTCA GCATCAACAA GTGCGTCAGC CTCAGCAAGT	480
ATCTCAGCGT CTGAATCGGC ATCAACGAGT GCGTCTGAGT CAGCATCAAC GAGTACGTCA	540
GCCTCAGCAA GCACCTCAGC TTCTGAATCG GCCTCAACCA GTGCGTCAGC CTCAGCATCG	600
ACAAGCGCCT CAGCTTCAGC AAGTACCAGT GCTTCAGCCT CAGCGTCGAC AAGTGCCTCG	660
GCCTCAACCA GTGCATCTGA ATCGGCATCA ACCAGTGCCT CAGCCTCAGC AAGTACTAGT	720
GCATCGGCTT CAGCATCAAC CAGTGCCTCG GCTTCAGCGT CAACCAAGTGC GTCAGCTTCA	780
GCAAGTACCA TGTGCTTCAT GTCTCAG	807

(2) INFORMATION FOR SEQ ID NO: 373:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 1068 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

1387

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 373:

CATCGGCTTC AGCATCAACG AGTGCCTCCG CTTCAGCAAG TACTACCGCC TCAGCCTCAG	60
CGTCAACAAG TGCATCGGCT TCAGCGTCAA CGAGTGCCTC TGAGTCAGCA TCAACGAGTG	120
CGTCACCTCA GCAAGCACAT CAGCTTCTGA ATCTGCATCA ACCAGTGCCT CACCTCAGCA	180
TCGACAAGCG CCTCAGCTTC AGCAAGTACC AGTGCCTCAC CTCAGCGTCG ACAAGTGCCT	240
CGGCTTCAGC AAGTACCAGT GCGTCACTC AGCAAGTACC AGTGCCTCAC CTCAGCGTCG	300
ACAAGTGCCT CGGCTCAAC CAGTGCATCT GAATCGGCAT CAACGAGTGC GTCACCTCAG	360
CAAGTACTAG TGCATCAGCT TCAGCATCAA CGAGTGCATC GGCTTCAGCA TCAACGAGTG	420
CATCAGAGTC AGCAAGTACC AGTGCCTCAG CTTCGCGATC AACAAGTGCC TCGGCTTCAG	480
CAAGTACTAG CGCCTCAGCC TCAGCGTCAA CAAGTGCTTC AGCTTCGCGC TCAACGAGCG	540
CCTCGGCCTC AGCAAGTATC TCAGCGTCTG AATCGGCATC AACAAGTGCC TCGGCTTCAG	600
CATCAACGAG TGCATCAGTC TCAGCAAGCA CCAGTGCCTC GGCTTCAGCA AGCACCAGCG	660
CGTCTGAATC CGCATCAACC AGTGCCTCAG CTTCAGCAAG TACCTCAGCA TCTGAATCAG	720
CATCAACAAG TGCATCGGCT TCAGCAAGCA CAAGTGCTTC AGCCTCAGCA AGTATCTCAG	780
CGTCTGAATC GGCATCAACG AGTGCCTCCG CTTCAGCAAG TACTAGCGCC TCAGCATCAG	840
CGTCAACAAG TGCTTCGGCT TCAGCGTCAA CGAGTGCCTC TGAGTCAGCA TCAACGAGTA	900
CGTCAGCCTC AGCAAGCACA TCAGCTTCTG AATCTGCATC AACGAGTGC TCAGCCTCAG	960
CATCGACAAG CGCCTCAGCT TCAGCAAGTA CCAGTGCCTC AGCCTCAGCA AGTACCAGTG	1020
CTTCAGCCTC AGCGTCGACA AGTGCCTCGG GCTCAACCAG TGCATCTG	1068

(2) INFORMATION FOR SEQ ID NO: 374:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 620 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 374:

CAGCATCAAC GAGTGCTTCA GTTTCAGCGT CAACGAGTGC CTCTGAATCA GCTTCAACAA	60
GTGCCTCGGC TTCAGCAAGC CCCAGTGCCT CGGCTTCAGC AAGTACTAGT GCATCGGCTT	120
CAGCATCGAC AAGTGCCTCT GAATCGGCAT CAACGAGTGC TTCGGCTTCA GCATCAACGA	180
GTGCCTCAGC CTCAGCAAGC ACATCAGCTT CTGAATCTGC ATCAACCAGT GCGTCCGyTT	240

1388

CAGCGTCAAC CAGTGCCTCG GCTTCAGCGT CGACAAGTGC TTCGGCTTCA GCATCAACGA	300
GTGCGTCGGC CTCAGCAAGC GCAAGTACCT CAGCGTCAGC TTCCGCCTCA ACCAGTGCCT	360
CGGCTTCAGC AAGCACAACT GCGTCAGCCT CAGCAAGTAT CTCAGCGTCT GAATCGGCAT	420
CAACGAGTGC GTCTGAGTCA GCATCAACGA GTACGTCAGC CTCAGCAAGC ACATCAGCTT	480
CTGAATCTGC ATCAACCAGT GCGTCAGCCT CAGCATCGAC AAGCGCCTCA GCTTCAGCAA	540
GTACCAGTGC TTCAGCCTCA GCGTCGACAA GTGCGTCGGC CTCAACCAGT GCATCTGAAT	600
CGGCATCAAC CAGTGCCTCA	620

(2) INFORMATION FOR SEQ ID NO: 375:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 720 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 375:

GTATTGGGGC GCCCCAACCT CTATGTGACT ACGGATTATT TCCTAGATTA CATGgGGATA	60
AACCATTTAG AAGAATTACC AGTGATTGAT GAGCTTGAGA TTCAAGCCCA AGAAAGCCAA	120
TTATTTGGTG AAAGGATAGA AGAAGATGAG AATCAATAAG TATATTGCCC ACGCAGGTGT	180
GGCCAGTAGG AGAAAAGCAG AAGAGCTGAT TAAGCAAGGC TTGGTGACGG TTAACGGCCA	240
AGTGGTGCGT GAACTAGCAA CCACTATCAA GTCAGGCGAC AAGGTCGAAG TTGAAGGTCA	300
ACCTATCTAC AACGAAGAAA AGGTCTACTA TCTGCTTAAC AAACCACGCG GTGTGATTTC	360
CAGTGTGACA GATGATAAGG GTCGCAAGAC GGTGTCGAC CTCTTGCCCA ATGTCAAAGA	420
GCGTATTTAC CCTGTGGGTC GTTTGGACTG GGATACATCA GGTGTCTTGA TTTTGACCAA	480
TGATGGGGAC TTTACAGACG AGATGATTCA CCCTCGTAAT GAGATTGACA AGGTTTATGT	540
CGCGCGTGTT AAAGGTGTGG CCAATAAGGA CAATCTCCGC CCCTTGACCC GTGGTCTTGA	600
GATTGATGGT AAGAAAACCA AGCCATAATA TATAGGTTTT GTAGCCTCTA CACCATAAAT	660
ATTTGCTAAT AAAAATACTG TATTATTACC CTCTTAAGGT GCGAAATTAT TCAAGTTCTT	720

(2) INFORMATION FOR SEQ ID NO: 376:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 648 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

1389

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 376:

CGCCATTTCC CATCGTACCG CCGAAAATCC CAGCGCCTCA GCCATCAAAT ATCCTATCAA	60
CGTTCTCAAA AAAAGTGACC GCTCTCTCAT CATGTTTCCA AGTGGTAGCC GCCACTCAAA	120
CGATGTCAAG GGGGGCGCAC ACTskATTGC CAAAATGGCC AAGGTCCGTA TCATGCCGGT	180
TACCTACACC GGTCCCATGA CTTTGAAGGG CTTGATTAGC CGTGAACGTG TCGATATGAA	240
CTTTGGAAAT CCAATCGATA TCTCAGATAT CAAGAAAATG AATGATGAAG GCATTGAAAC	300
AGTCGCCAAT CGTATTCAAA CAGAATTCCA ACGTCTGGAC GAAGAAACGA AACAATGGCA	360
CAATGATAAA AAACCAAATC CACTCTGGTG GTTTATCCGC ATCCCTGCCC TCATCCTTGC	420
TATTATCCTC GCTATCCTAA CCATCATCTT TAGCTTTATC GCAAGCTTCA TCTGGAACCC	480
AGATAAGAAA AGAGAAGAAC TTGCATAGAA GAAATGAACC TTGGCCAAAC AGCTAAGGTT	540
TTCATTTATA TAGTAGATTG GwACTAGAAT AGTACACCTC TACTTCTAAA ACATTTTtag	600
AAATCGATTT GACTGTCCTG ATCGATTTGT CCTAATCTTA TTTCaATT	648

(2) INFORMATION FOR SEQ ID NO: 377:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 690 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 377:

GTGCATCGCT TTCAGCATCG ACAAGTGCCT CTGAATCGGC ATCAACGAGT GCTTCGGCTT	60
CAGCATCAAC GAGTGCCTCA GCTTCAGCAA GCACATCAGC TTCTGAATCT GCATCAACCA	120
GTGCGTCCGC TTCAGCGTCA ACCAGTGCCT CGGCTTCAGC GTCGACAAGT GCTTCGGCTT	180
CAGCATCAAC GAGTGCCTCG GCCTCAGCAA GCGCAAGTAC CTCAGCGTCA GCTTCCGCCT	240
CAACCAAGTGC GTCCGCTTCA GCAAGCACAA GTGCGTCAGC CTCAGCAAGT ATCTCAGCGT	300
CTGAATCGGC ATCAACGAGT GCGTCGGCCT CAGCAAGCGC AAGTACCTCA GCGTCAGCTT	360
CCGCCTCAAC CAGTGCCTCG GCTTCAGCAA GCACAAGTGC GTCAGCCTCA GCAAGTATCT	420
CAGCGTCTGA ATCGGCATCA ACGAGTGCCT CTGAGTCAGC ATCAACGAGT ACGTCAGCCT	480
CAGCAAGCAC ATCAGCTTCT GAATCGGCAT CAACCAAGTGC GTCAGCCTCA GCATCGACAA	540
GCGCCTCAGC TTCAGCAAGT ACCAGTGCTT CAGCCTCAGC GTCGACAAGT GCGTCGGCCT	600
CAACCAAGTGC ATCTGAATCG GCATCAACCA GTGCGTCAGC CTCAGCAAGT ACTAGTGCAT	660

CAGCTTCAGC ATCAACGAGT GCATCGGCTT 1390 690

(2) INFORMATION FOR SEQ ID NO: 378:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 1003 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 378:

CGAGATTCTC TGGAGTTATG GATGTCGTTC CAATATGTGC ACGTTGGAAT GTTAGTGCTT 60
ATATGGGGGG AACAGAATCC TCTCTTGATT GAAGACAAGC TAGTCATTAG GCTGGTTTGT 120
CTTTTGTCA ACTGTAGTGG GTTGATATAA TAGTATTAGT GAGTGGGATA AAAGTTTCAT 180
TTAGTTTATT CAGTACAAAT TTAACGGGTC AAGATTTATA TACTAGTGGT GTTTTGGGG 240
CTGAGAGAAG TATCTTGATT TTATGTGTGG TTTTATACT TACAGTTGTT CTGCTCCPAA 300
GAGCTTGTAG AGAAGAATTA GCTCATAAAG GAGATTGATT ATTTTGATAT CAAAAAATG 360
CACAGGATAA CCTGATGCAT TTTTGTAGCG ACAATGCTTG CTACTTCCTT CTGTCGAATT 420
TAGACAATTT TAAACCCCAA TTATTCACCC CAAATCTAAA AACCATCCAG AATCCTTGCC 480
TTAGCTTAGA TCCTGGATGG TTTCTTTTTT CACCCAATGG GTGTTTTTTA CTAGACAAAA 540
AAGAGTTTCC CCTTTATGGT ATAAGTGTAG AAAAAACAC AAAAAGAAAG GAAACTCACA 600
TGAACAGTTT ACCAAATCAT CACTTCCAAA ACAAGTCTTT TTACCAACTA TCTTTCGATG 660
GAGGTCATTT AACCCAGTAT GGTGGTCTTA TCTTTTTC A GAACTTTTT TCCCAGTTGA 720
AACTAAAAGA GCGGATTTCT AAGTATTTAG TAACGAATGA CCAACGCCGC TACTGTCGTT 780
ATTCGGATTC AGATATCCTT GTCCAGTTCC TCTTCAACT GTTAACAGGT TATGGAACGG 840
ACTATGCTTG TAAAGAATTG TCAGCTGATG CCTACTTTCC AAAATTATTG GAAGGAGGGC 900
AGCTTGCTTC ACAGCCAACC TTATCCCGTT TTCTTTCCAG AACTGACGAG GAAACAGTCC 960
ATAGTTTGCG ATGCCTCAAC CTGAATTGG TCGAATTCTT TTT 1003

(2) INFORMATION FOR SEQ ID NO: 379:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 738 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 379:

1391

CCGATGATTC TGATTGGTTT GCTCTTTACT TTGCTGGGAA TTTTGAGGTA GATCTATGAT	60
TGAAATACTA ATTGTTTTAG CTATTATCCT ATCTCTTGCT TTGATTGTAT TGGTAACTAT	120
ACAACCCCGT CAAAATCAAC TATTTTCCAT GGATGCCACT AGTAATATTG GTAAACCAAG	180
CTACTGGCAG AGCAACACCT TGGTCAAGGT GCTCACTTTA TTGGTGAGTT TGGCTTTATT	240
TATTCTACTA TTAACCTTTA TGGTGATTAC TTATAAATAA AAGAAAACCT CAGATATTCA	300
CCTTTTGTGG ATTGGTCTGA AGTTTCTTTT TTTATACTCA ATGAAAATCA AAGAGCAAAC	360
TAGGAAGCTA GCCGCACkGC TCAAAACACC GTTTTGAGGT TGTAGATATA ACTGACGAGc	420
GACTCAAAAC ACCGTTTGA GGTGTAGAT ATAACCTGACG AGcGACTCAA AACACCGTTT	480
TGAGGTTGTG GATAGAACTG ACGAGcGACT CAAAACACCG TTTTGAGGTT GTGGATAGAA	540
CTGACGAAGT CGcTCAAAAC ACCGTTTGA GGTTGTGGAT AGAACTGACG AatgctCAAA	600
ACACCGTTTT GAGGTTGTGG ATAGAACTGA CGAAGCgaaC ATATATACAG CAAGGCGACG	660
CTGACGTGGT TTGAAGAGTA TTACTGTCTA TATTTTGGT AAAAATCAAC TTTTACTTGG	720
ATGAAGGTTT TTTTTTTT	738

(2) INFORMATION FOR SEQ ID NO: 380:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 695 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 380:

CCGCTCTTATC AAAGAGGTTA ACAAAGGCAC CAAATTTCTC GATACGAACG ACTTTAGCAC	60
GGTAAACTTC ATCCACTTTG GCTTCACGAA CCAAACCAGC AATAATTTCT TTGGCACGGT	120
TAATAGCATC TTGGTCACTA GAGTAGATAG ACACATTTCC TTCTTCGTCT ATATCAATCT	180
TAACACCTGT TTCAGCGATA ATCTTGTCGA TGGTTTCTCC ACCCTTACCG ATGACAATCT	240
TAATCTTGTC CACATCAATC TTGATCGTAT CAATTTTCGG AGCAGTTGGA GCCAATTCTG	300
GACGAACTTC TGGAATGGTT GCTTCAATGA CATCAAGGAT TTCAAAACGC GCTTTCTTGG	360
CTTGAGCAAG AGCCTCCGTC AAGATTTCTG CAGTAATCCC TTGAATCTTG ATATCCATTT	420
GAAGGGCTGT AATCCCATCA CGAGTACCTG CAACCTTGAA GTCCATATCT CCAAAGTGAT	480
CTTCCAAACC TTGGATATCT GTCAATACTG TGAGTTATT TCCATCTGAG ATAAGCCCCA	540
TAGCAATACC AGCTACTGGC GCCTTGATTG GCACACCACC AGCCATAAGG GCAAGAGTTC	600

1392

CCGCACAGAT AGAAGCTTGA GATGAAGAAC CGTTTGATTG CAAAACCTTCT GCTACTAGAC	660
GGATAGCGTA GGGGAATTCT TCCAAGCTTG GCAGG	695

(2) INFORMATION FOR SEQ ID NO: 381:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 691 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 381:

GACATCTTAT CTAAATACAT GCTAATATAT TTAGATACAA ACATTCCAAC TTGATAATTT	60
TCACTCATCT TTCATCATC CTATACAAAC TATGCAGTAT AAATAGAATA GTTTTCTCAT	120
CAGAATGAGA CTATTTTAAT ATTAGATCCC CAATTATTCA CCCCAAATCT AAAAACCATC	180
CAGAATCCTT GCCTTAGCTT AGATCCTGGA TGGTTCTTTT TTTCACCCAA TGGGTGTTTT	240
TTACTAGACA AAAAAGAGTT TCCCCTTTAT GGTATAAGTG TAGAAAAAAA CACAAAAAGA	300
AAGGAACTC ACATGAACAG TTTACCAAAT CATCACTTCC AAAACAAGTC TTTTACCAA	360
CTATCTTTCG ATGGAGGTCA TTTAACCAG TATGGTGGTC TTATCTTTTT TCAGGAAGTT	420
TTTTCCAGT TGAACTAAA AGAGCGGATT TCTAAGTATT TAGTAACGAA TGACCAACGC	480
CGCTACTGTC GTTATTCGGA TTCAGATATC CTTGTCCAGT TCCTCTTCA ACTGTTAACA	540
GGTTATGGAA CGGACTATGC TTGTAAAGAA TTGTCAGCTG ATGCCTACTT TCCAAAATTG	600
TTGGAAGGAG GGCAGCTTGc TTCACAGCCA ACCTTATCCC GWTTCCTTTC CAGAACTGAC	660
GAGGAAACAG TCCATAGTTT GCGATGCCTC A	691

(2) INFORMATION FOR SEQ ID NO: 382:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 750 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 382:

ATCTCTCTGC GTAATGGTCC TCAGATAACT CTGATGATGT GTGGCGATAT AGAACTGAGC	60
CAAGTTATGC CTAAGGGGCC TTAGGAATAG GAGCTTTCAC AAGCTTATCC AGATGATTAT	120
CTTTTACTCG TTATGGACAA TGCTATATGG CATAAATCAA GTACCTTAAA GATTCCGACT	180
AATATTGGCT TTGCATTTAT TCCTCCATAC ACACCAGAGA TGAACCCCAT TGAACAAGTG	240

1393

TGAAAAGAGA TTCGTAAACG TGGATTTAAG AATAAAGCCT TTCGAACTTT GGAAGATGTC	300
ATACAAGGAC TGGAGAAGGA GGTGATAAAG TCCATCGTTA ATCGGAGACG GACTAGAATG	360
CTTTTGTAAA ACAGATGACT ATAAAAAGAA AGTCCTCATT TCAATAGAAA TCACGACTTT	420
CTGATGAATT TATAGTAAAA TGAAATAAGA ACAGGATAGT CAAATCGATT TCTAACAATG	480
TTTTAGAAGC AGAGGTGTAC TATTCTAGTT TAAATCCACT ATATTGGGG AGTGATAGAA	540
AAGCCCTTCA TCAGCCAATC TACTTGTTCA GGTGCGAGAG CTTTGACATC CTTTCTGTGA	600
CTGGACCAAG TCAGTTTTC GTTCTCAAAG CGTTTATATA ATATCCAAA TCCTTGACCA	660
TCCCAGTAAA GAACTTTAAA GCGGTCTTTA CGTCCACCAC AAAAGAGAAA GACTTGATCG	720
GAGAAAGGAT CCAATTCAA GTGGGTTTGG	750

(2) INFORMATION FOR SEQ ID NO: 383:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 738 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 383:

TCAAATTCCT CGTGGTCCGC ATATCTnTCT TCGTACACGG CAGTCACTTG GTCTTCACT	60
ACTCGAGTCG CAGCTTCACG GGCCAATTTC TCTTCTACTT GAACTGCCTT TTGGAGGTCA	120
CTGTTGTAGG CTGCAATGAT TTCAGCTTGC AATTCAGCAT CCACGTGAAG CAATTCCACT	180
TCTGCTTTTT CTTTACCGAC AGCAGCAACG ATTTCTTCTT GGAAGGCAAT CAATTCTTTG	240
ACAGCTTCGT GCCCTTTAAG GAGCGCTTCC AACATGATTT CTTCTGACAA TTCTTTGGCA	300
CCAGACTCTA CCATGTTGAT AGCGTGCTTG GTTCCAGCTA CTGTCAATTC AAGAAGAGAT	360
TGCTCTGCTT GTTCTTGACT TGGGTTGATG ATGATTTGGC CATCTACATA TCCCACTTGT	420
ACCCCAGCAA TTGGTCCGTC AAATGGAATA TCTGAAATAG ACAGTGCCAA AGATGAACCA	480
AACATAGCAG CCATTGGTGC AGATGCATTT TCATCATAAG AAAGCACTGT ATTGATGACT	540
TGGACTTCAT TACGGAAACC TTCCGCAAAC ATAGGACGAA TCGGACGGTC AATCAAACGC	600
GCTGTCAAGG TCGCATCTGT TGAAGGACGT CCTTCACGTT TCATAAAGCC ACCAGGAAAC	660
TTCCCAGCCG CATACATTTT TTCTTCGTAG TTGACTTGGA GTGGGAAGAA ATCCTCAGTT	720
GCCATTTTCT GGGGATCC	738

(2) INFORMATION FOR SEQ ID NO: 384:

1394

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 657 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 384:

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CCCCCTATTT ACCGTGGACT AAAGTTGTAC AAGAAAAGTG CAAATAAGAA ATCTCCAGAT      60
TAGGAAGTAT ATATGAGTTC TCTAGTCTGG AGATTTTTCa ATAGACTTCG TTATTGGGCG      120
GTTACTTTTCG AAACCTTGAA AACTTCAAAA AACGGATTTT TATCGCTTTC AAATTCTTTT      180
GGGGTCAAAC TCAGTAACTT ATTCGCCTTG TAGACTTCAT GACGCTCAGG GTATACTTTC      240
AAGGTCCCAA ATAGCCAAGA ATCGTCAGCG ATATTATCTG AATCATCTCC TTCTTGTTCT      300
CCTTTAGTTC GCCTGAGGAC AGCCTTGACA CGCGCCAGAA TTCTCTAGGG CTAAGAGGCT      360
TGGTCAGGTA GTCATCAGCC CCTAATTCCA AGGCCAAAAC CTTATCAAAT TCATCACTTT      420
TCGCAGAAAC CATCATAATT GGAGTTTGA CGCCTTTGGC TCTCAGCCGC TTACAAACTT      480
CCATGCCATC TAATTGTGGT AACATGATAT CAAGCAAGAT AAAATCAAAG GGTTCGTCTT      540
CTGCCAAAGC TAAGGCCTTC CGTCCATTG TCACCAATTG AGTAGAAAAG CCTTCCTTAC      600
TTAAATGGTA GTCAAGCAAT TTCAGAATGT GTTCTTCATC ATCCACTAAT AAGACTT      657

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(2) INFORMATION FOR SEQ ID NO: 385:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 586 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 385:

```

CCGCATCAGC ATCAACGAGT GCATCGGCTT CACGTCAACC AGTGCATCAG TCTCAGCAAG      60
CACCAGTGCG TCGGCTTCAG CATCAACGAG TGCCTCAGCC TCAGCAAGTA TCTCAGCGTC      120
TGAATCGGCA TCAACGAGTG CGTCAGTCA GCAAGTACTA GTGCATCGGC TTCAGCAAGC      180
ACCAAGTGCCT CGGCTTCAGC ATCAACGAGT GCCTCAGCCT CAGCAAGTAT CTCAGCGTCT      240
GAATCGGCAT CAACGAGTGC GTCACCTCAG CAAGTACTAG TGCATCAGCA TCAGCATCAA      300
CGAGTGCATC GGCTTCAGCA AGTACCAGCG CCTCAGCTTC AGCAAGCACC AGTGCGTCAC      360
CTCAGCAAGT ACCAGCGCCT CAGCCTCAGC AAGCACCAGT GCCTCAGCTT CAGCAAGTAC      420
CAGTGCGTCA CCTCAGCATC GACAAGTGCG TCGGCTTCAG CAAGTACCTC AGCGTCTGAA      480

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1395

TCAGCATCAA CGAGTGCCTC AGCTTCAGCA TCAACCAGTG CCTCAGCCTC AGCAAGTATC 540
 AGTGCCTCAG CTTCAGCATC AACGAGTGCG TCAGCTGCAG CAAGTA 586

(2) INFORMATION FOR SEQ ID NO: 386:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 451 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 386:

CGTCGGCTTC AGCATCAACG AGTGCATCAG CTTCAGCATC AACAAGTGCT TCAGCTTCAG 60
 CAAGTACCAG TCGCTCGGCT TCAGCATCAA CGAGTGCTTC AGTCTCAGCG TCAACCAGTG 120
 CCTCTGAATC CGCATCAACA AGTGCCTCGG CTTCAGCAAG CACCAGTGCT TCGGCTTCAG 180
 CGTCAACGAG TCGCTCTGAG TCAGCATCAA CGAGTGCCTC ACCTCAGCAA GCACATCAGC 240
 TTCTGAATCT GCATCAACCA GTGCGTCAGC TTCCGCATCA ACAAGCGCCT CGGCCTCAGC 300
 AAGTACAAGT GCTTCAGCCT CAGCATCAAC CAGTGCATCA GCTTCAGCCT CAACAAGTGC 360
 TTCAGCCTCA GCGTCAACCA GTGCCTCGGC TTCAGCAAGT ACCAGTGCCT CAGTTcAGCA 420
 AGCACAAGTG CGTCAATTTA GCATCAACCA G 451

(2) INFORMATION FOR SEQ ID NO: 387:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 425 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 387:

TCTCAGCAAG CACCATTGCG TCGGCTTCAT CAAGCACCAG CGCGTTTGAA TCCGCATCAA 60
 CCAGTGCTTC AGCTTCAGCC AAGTTACCTC AGCATCTGAA TCAGCATCAA CAAGTGCATC 120
 GGCTTCAGCA AGCACAAGTG CTTCAGCtCA GCAAGTATCT CAGCGTCTGA ATCGGCATCA 180
 ACAGTGCGT CCGCTTCAGC AAGTACTAGC GCCTCAGCAT CAGCGTCAAC AAGTGCTTCG 240
 GCTTCAGCGT CAACGAGTGC GTCTGAGTCA GCATCAACGA GTACGTCAGC CTCAGCAAGC 300
 ACATCAGCTT CTGAATCTGC ATCAACCAGT GCGTCAGCCT CAGCATCGAC AAGCGCCTCA 360
 GCTTCAGCAA GTACCAGTGC GTCAGCCTCA GCAAGTACCA GTGCTTCAGC CTCAGCGTCG 420

ACAAG

1396

425

(2) INFORMATION FOR SEQ ID NO: 388:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 572 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 388:

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AGAGGATCCC CGGATCCTCA GTCGCTGAGA TAACTCCTTT GGGCTTGTTC ATCATGTAGT      60
AGACAAACTC TTCATACTCC AACACTTGCC CATTTTATGC GAATCTCATC TATTTTTTCT      120
TTTTTTTGCA ATTTAGCTGA TTTTCTTTT TTACCATTTA CAGTCACGCG CCCAGCCTTG      180
AGCAAGTTTT TGACCTCAGT CCGACTTCCC ACCGCACAGG CAACTAAAAA TTTATCTAAT      240
CTCATAGAAC TATTATATCA TATCAAAAGG AGGCTAGTAC AATGACCAAC CTCCTTTTTCG      300
TTTCATACTC TTCAAAAATC TCTTCAAACC GCGTCAACGT CGCCTTGCCG TATATATGTT      360
ACTGACTTCG TCAGTTCTAT CTGCAACCTC AAAACAGTGT TTTGAGCTGA CTTCGTCAGT      420
TCTATCTGCA ACCTCAAAGC AGTGCTTTGA GCATCCTGCG GCTAGTTTCC kAGTkTGCTC      480
TTTGATTTCw ATTGAGTATC AGATTAGGA AATTAACTTC CTCGkCTCCA AAAAAkAGCT      540
AAAACAATCA AGGCTCCTAA AATCGCTGGG AT                                     572
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(2) INFORMATION FOR SEQ ID NO: 389:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 505 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 389:

```
CAACAAGTGC CTCGGCTTCA GCATGCACAA GTGCTTCAGC TTCAGCATGT ACCTGAGCGT      60
CTGAATCAGC ATCAACGTGT GCGTCCGCTT CAGCATGTAC TGCTGCCTCA GCATCAGCGT      120
CAAcAwGTGC TTCGGCTTCA GCGTCAACGA GTGCGTCTGA GTCAGCATCA ACGAGTACGT      180
CAGCCTCAGC AAGCACATCA GCTTCTGAAT CTGCATCAAC CAGTGCGTCA GCCTCAGCAT      240
CGACAAGCGC CTCAGCTTCA GCAAGTACCA GTGCGTCAGC CTCAGCAAGT ACCAGTGCTT      300
CAGCCTCAGC GTCGACAAGT GCGTCGGCCT CAACCAAGTGC ATCTGAATCG GCATCAACCA      360
GTGCGTCAGC CTCAGCAAGT ACTAGCGCCT CAGCCTCAGC ATCAACGAGT GCGTCCGCTT      420
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1397

CAGCAAGTAC TAGTGCATCA GCATCAGCAT CAACGAGTGC ATCGGCTTCA GCAAGTACCA 480
 GCGCCTCAGC TTCAGCAAGC ACCGG 505

(2) INFORMATION FOR SEQ ID NO: 390:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 447 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 390:

GCTAAGACTA CCTCATTAGG GGCATAGGCT GCTAAAATAA CTGCAGCTGT GGTTAATGAC 60
 AATACTGTAC TTTTTCAT TTTAATTCCT TACATATTTA TATAACTTCC AATAGATAAT 120
 AAACCTTAAC TTTGCTAGCC TTTGTTATAA AAAGTTTAC TAAGTATTAT CTAGGAAATA 180
 GAGTAGTACA TTTATATATA ATTGTTATCT CTCTATAAAA ACAGTATATC ATTTAAAAAA 240
 ATTTAAGTCA AAAAAATTAA CATTAGTTAA TTTATTTTTT AGCACACATT AAAAAATAAG 300
 ATTAGTACTC AATGAAAATC AAAGAGCAAA CTAGGAAACT AGCCGCAGAT TGCTCAAAAC 360
 AGTGTTTTGA GGTGTAGAT GGAATGACGT AGTCAGCTCA AAACACTGTT TTGAAGTTGT 420
 GGATAGAACT GACGAAGTCG GTACCGA 447

(2) INFORMATION FOR SEQ ID NO: 391:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 572 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 391:

AGCACTTGTC GTTGAATTCT ACAACAAAT GTTGAATAT TTTATTGAAT AAGATAGGCC 60
 TTGATATTAA GCACTTGGG ACGTTCTCCC TTAGTGCTTT TTTGATTCT CTTAGTATCC 120
 AGCTATAATC GTTGAGACAT AACTAGACCG ATATAGTCCA AAGTGATATA GTAAAATGAA 180
 CCAAAAATAG TACACAATGT GGTATAATCC TTTTATGGCA TATTCAATAG ATTTTCGTAA 240
 AAAAGTTCTC TCTTATTGTG AGCGAACAGG TAGTATAACA GAAGCATCAC ACGTTTCCCA 300
 AATCTCACGT AATACCATT TATGGCTGGT AAAGCTAAAA GAGAAAACAG GAGAGCTAAA 360
 CCACCAAGTA TAGTGTATTG AATCTATAAC AGTACACCTT GGCTGCTAAA ATATTCTAT 420

1398
AAATTAATTT GACTTTCCTG ATAGAGATGT TCACATCTTA TTTCAAATA CTATATAAGT 480
TCTATAATCT CTTTATAAGA TTTGCCCATC AGACAAAATA GAACGATTG AAGGCGTTTA 540
TGATATTTAG CTGTACGAGA GTCTTTTAAA AG 572

1399

MISSING UPON TIME OF PUBLICATION

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person approved by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PUT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant, any request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by the applicant in the individual case.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the International publication of the application.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapse, the microorganism shall be made available as provided in Rule 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever two dates occurs earlier.

SINGAPORE

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for international publication of the application.

NORWAY

The applicant hereby requests that, until the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegians Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Registration), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

ICELAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the Icelandic Patent Office), or has been finally decided upon by the Icelandic Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected in the art.

What Is Claimed Is:

25 1. Computer readable medium having recorded thereon the nucleotide sequence depicted in SEQ ID NOS:1-391, a representative fragment thereof or a nucleotide sequence at least 95% identical to a nucleotide sequence depicted in SEQ ID NOS:1-391.

30 2. Computer readable medium having recorded thereon any one of the fragments of SEQ ID NOS:1-391 depicted in Tables 2 and 3 or a degenerate variant thereof.

35 3. The computer readable medium of claim 1, wherein said medium is selected from the group consisting of a floppy disc, a hard disc, random access memory (RAM), read only memory (ROM), and CD-ROM.

40 4. The computer readable medium of claim 3, wherein said medium is selected from the group consisting of a floppy disc, a hard disc, random access memory (RAM), read only memory (ROM), and CD-ROM.

 5. A computer-based system for identifying fragments of the *Streptococcus pneumoniae* genome of commercial importance comprising the following elements:

45 a) a data storage means comprising the nucleotide sequence of SEQ ID NOS:1-391, a representative fragment thereof, or a nucleotide sequence at least 95% identical to a nucleotide sequence of SEQ ID NOS:1-391;

 b) search means for comparing a target sequence to the nucleotide sequence of the data storage means of step (a) to identify homologous sequence(s), and

 c) retrieval means for obtaining said homologous sequence(s) of step (b).

50 6. A method for identifying commercially important nucleic acid fragments of the *Streptococcus pneumoniae* genome comprising the step of comparing a database comprising the nucleotide sequences depicted in SEQ ID NOS:1-391, a representative fragment thereof, or a nucleotide sequence at least 95% identical to a nucleotide sequence of SEQ ID NOS:1-391 with a target sequence to obtain a nucleic acid molecule comprised of a complementary nucleotide sequence to said target sequence, wherein said target sequence is not randomly selected.

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60 7. A method for identifying an expression modulating fragment of
Streptococcus pneumoniae genome comprising the step of comparing a database
comprising the nucleotide sequences depicted in SEQ ID NOS:1-391, a
representative fragment thereof, or a nucleotide sequence at least 95% identical to
the nucleotide sequence of SEQ ID NOS:1-391 with a target sequence to obtain a
nucleic acid molecule comprised of a complementary nucleotide sequence to said
65 target sequence, wherein said target sequence comprises sequences known to
regulate gene expression.

8. An isolated protein-encoding nucleic acid fragment of the *Streptococcus*
pneumoniae genome, wherein said fragment consists of the nucleotide sequence of
70 any one of the fragments of SEQ ID NOS:1-391 depicted in Tables 2 and 3, or a
degenerate variant thereof.

9. A vector comprising any one of the fragments of the *Streptococcus*
pneumoniae genome SEQ ID NOS:1-391 depicted in Tables 2 and 3 or a
75 degenerate variant thereof.

10. An isolated fragment of the *Streptococcus pneumoniae* genome,
wherein said fragment modulates the expression of an operably linked open reading
frame, wherein said fragment consists of the nucleotide sequence from about 10 to
80 200 bases in length which is 5' to any one of the open reading frames depicted in
Tables 2 and 3 or a degenerate variant thereof.

11. A vector comprising any one of the fragments of the *Streptococcus*
pneumoniae genome of claim 8.

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12. An organism which has been altered to contain any one of the
fragments of the *Streptococcus pneumoniae* genome of claim 8.

13. An organism which has been altered to contain any one of the
90 fragments of the *Streptococcus pneumoniae* genome of claim 10.

14. A method for regulating the expression of a nucleic acid molecule comprising the step of covalently attaching to said nucleic acid molecule a nucleic acid molecule consisting of the nucleotide sequence from about 10 to 100 bases 5' to any one of the fragments of the *Streptococcus pneumoniae* genome depicted in SEQ ID NOS:1-391 and Tables 2 and 3 or a degenerate variant thereof.

15. An isolated nucleic acid molecule encoding a homolog of any of the fragments of the *Streptococcus pneumoniae* genome of SEQ ID NOS:1-391 and Tables 2 and 3, wherein said nucleic acid molecule is produced by a process comprising steps of:

a) screening a genomic DNA library using as a probe a target sequence defined by any of SEQ ID NOS:1-391 and Tables 2 and 3, including fragments thereof;

b) identifying members of said library which contain sequences that hybridize to said target sequence; and

c) isolating the nucleic acid molecules from said members identified in step (b).

16. An isolated DNA molecule encoding a homolog of any one of the fragments of the *Streptococcus pneumoniae* genome of SEQ ID NOS:1-391 and Tables 2 and 3, wherein said nucleic acid molecule is produced a process comprising steps of:

a) isolating mRNA, DNA, or cDNA produced from an organism;

b) amplifying nucleic acid molecules whose nucleotide sequence is homologous to amplification primers derived from said fragment of said *Streptococcus pneumoniae* genome to prime said amplification;

c) isolating said amplified sequences produced in step (b).

17. An isolated polypeptide encoded by any of the fragments of the *Streptococcus pneumoniae* genome of SEQ ID NOS:1-391 and depicted in Table 2 and 3 or by a degenerate variant of said fragments.

18. An isolated polynucleotide molecule encoding any one of the polypeptides of claim 17.

19. An antibody which selectively binds to any one of the polypeptides of claim 17.

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20. A method for producing a polypeptide in a host cell comprising the steps of:

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a) incubating a host containing a heterologous nucleic acid molecule whose nucleotide sequence consists of any one of the fragments of the *Streptococcus pneumoniae* genome of SEQ ID NOS:1-391 and depicted in Tables 2 and 3, under conditions where said heterologous nucleic acid molecule is expressed to produce said protein, and

b) isolating said protein.

Figure 1

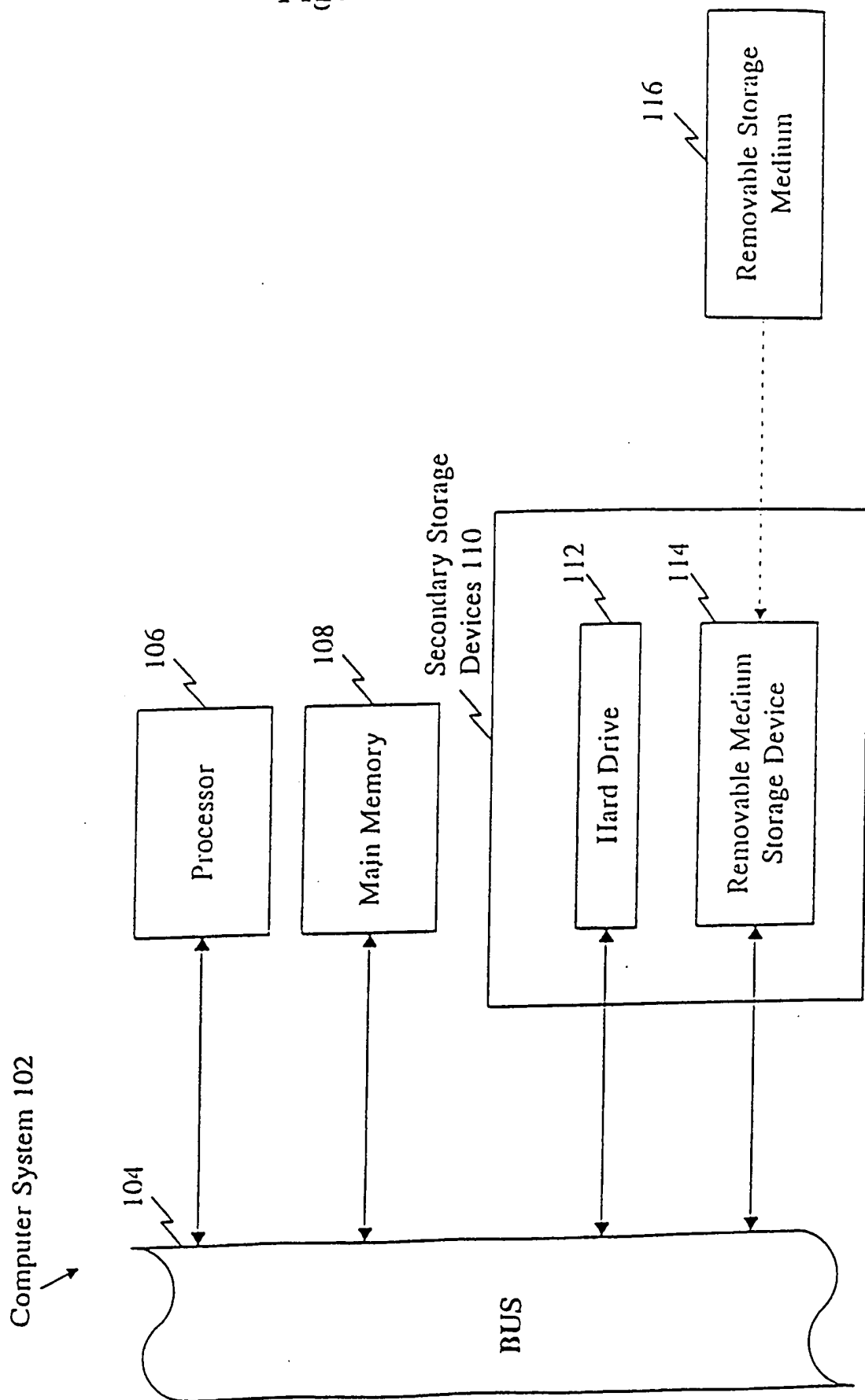


Figure 2

